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**THE POLICY OBJECTIVES AND THE OPTIMAL INSTITUTIONAL
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Kunio Okina*

ABSTRACT

The ultimate objective of monetary policy is to improve the economic welfare of the people. Price stability is a necessary but not sufficient condition for achieving sustainable economic growth. Thus, within the general condition of price stability, the guiding principle of monetary policy should be to offset price increase originating from the demand side while allowing some price increase originating from the supply side. One of the potential problems in conducting monetary policy according to this principle is that it may weaken the credibility of the central bank's commitment to maintain price stability by allowing price increases in some cases. In order to avoid this problem, the following four approaches are compared in this paper: (1) adoption of inflation or monetary targeting; (2) the use of a state contingent rule; (3) the delegation of the responsibility of monetary control to an independent and conservative central bank; and (4) the adoption of a non-inflationary monetary rule with a governmental option to override that rule.

KEY WORDS: Inflation targeting; Policy objectives; Sustainable economic growth; Price stability; Central bank independence; Optimal institutional framework; State contingent rule; Conservative central banker; Overriding clause

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I. Introduction

In recent years, an inflation-targeting approach to monetary policy has been gaining popularity among European and Oceanian policy makers while the monetary targeting approach, which once dominated policy discussions in the 1970s, has been somewhat losing support, especially in the United States. In Europe, the scheduled emergence of Economic and Monetary Union and establishment of the European System of Central Banks have stimulated discussions on the desirable institutional framework for a central banking system to achieve price stability. At the same time, France, Italy, Belgium, and Spain have amended their statutory frameworks to strengthen the independence of their central banks.

Japan, in the meantime, seems to have succeeded in maintaining price stability since the late 1980s, although its economy has experienced a large swing in the business cycle due to the emergence and collapse of the so-called "bubble economy". The bursting of the bubble economy has also placed stress on the financial system and, together with an observation of a large swing in the money supply, some argue that the Bank of Japan should have tightened its monetary policy during the bubble economy period even if this might have led to a decline in the consumer price level (Figure 1). An amendment to the Bank of Japan Act that would strengthen its independence is often discussed, but has rarely focused on the issue of what might be the most optimal institutional framework to help achieve the objectives of monetary policy more effectively.

With this situation in mind, the following two questions are discussed in this paper. First, what policy objectives should a central bank pursue? Second, what is the optimal institutional framework in which a central bank can most effectively achieve those objectives?

Section II discusses sustainable economic growth and its relationship with price stability, which is regarded as the main objective of monetary policy by many central banks. Section III examines the operational definition of price stability. In Sections IV and V, the issue of the independence of a central bank and the optimal institutional framework to achieve the policy objectives are discussed. Section IV examines the usefulness of independence in achieving the policy objectives. Section V asks what institutional framework helps a central bank gain credibility and hence achieve its policy objective most effectively. Finally, Section VI summarizes the main conclusions.

II. The Objectives of Monetary Policy

A. Economic Policy and Sustainable Growth

The ultimate objective of economic policy is to improve the economic welfare of the people. This general policy principle seems to embrace many specific goals such as higher real income, fairer income distribution, a better natural environment, and the higher efficiency and utility of economic activities.

In fact, the reduced efficiency and utility of economic activities or increased unfairness of income distribution could undermine the economy's ability to achieve sustainable economic growth. Conversely, sustainable economic growth could make it possible for an economy to achieve continuous improvement in economic welfare without wasting limited resources and without intensifying social conflict arising from unfair income distribution. Therefore, if an economy has achieved sustainable economic growth, then its economic policy may be judged to have been successful.

From this viewpoint, price stability and financial system stability are important not only for their own sake but for achieving sustainable economic growth, which translates into a continuous improvement in economic welfare.¹ Even though price stability helps achieve sustainable economic growth, it cannot realize sustainable economic growth by itself because economic growth depends on many other factors. Therefore, the central bank alone cannot be held responsible for the policy of achieving sustainable growth.

B. Price Stability as the Main Objective of Monetary Policy

In recent years, a view that monetary policy should only aim at achieving price stability is gaining popularity. The central banks of the United Kingdom, Canada, Sweden, New Zealand, Finland, Australia, and Spain have started practicing inflation-targeting policies which aim at containing the rate of inflation within a certain target range.

There are at least three reasons for this development. First, these countries previously experienced relatively high and persistent inflation under a monetary policy which used monetary aggregates or exchange rates as an intermediate target. Second, they might believe in the argument

that money is neutral with respect to real economic activity and only affects the price level in the long run, and that therefore monetary policy should only aim at maintaining price stability. Even so, it cannot be denied that monetary policy affects real economic activity such as output and employment. I will discuss later how these inflation-targeting countries deal with this problem. Third, it can be argued from the perspective of political economy that by setting price stability as the sole objective of monetary policy, the central bank can achieve sustainable economic growth more easily because it mitigates a disruptive inflationary bias in the policy-making process. In fact, political considerations often produce an inflationary bias in the economic policy-making process. If this bias undermines the economy's ability to achieve sustainable economic growth, then a central bank can improve macroeconomic performance by persistently pursuing the objective of price stability because this helps offset the politically induced inflationary bias. Later we will discuss this issue in connection with the related issue of the policy independence of a central bank.

Granting that price stability is important not only for its own sake but for achieving sustainable growth, a central banker then has to know the precise relationship between sustainable economic growth and price stability. Moreover the operational definition of price stability becomes important in the actual implementation of monetary policy. For example, the following questions arise. Should the price index relevant for monetary policy be the standard price indexes such as WPI, CPI, or some new indexes which include asset prices (i.e. land price, stock price)? Should the inflation rate so measured be kept to zero, or mildly positive or negative?

III. The Operational Definition of Price Stability

A. Importance of a Cost-Price Relationship

From the perspective of achieving sustainable growth, what is the operational definition of price stability? The traditional answer has been to maintain a representative price index such as the Consumer Price Index (CPI) at zero growth. This helps prevent inflationary expectations of households and helps firms from developing, and helps reduce uncertainty arising from price volatility that may adversely affect consumption and investment decisions. In theory, it may be sufficient to

maintain a constant rate of moderate inflation, not necessarily zero inflation, to avoid the uncertainty of the future developments of inflation. However, in practice, many central bankers have learned that it is difficult to prevent moderate inflation not only from fluctuating but also from accelerating. Consequently the idea of a zero inflation target has many strong proponents among central bankers.²

The idea of zero inflation as the sole monetary policy target, however, finds fewer proponents in Japan because of its recent experience with the bursting of the bubble economy, which produced a large swing in the business cycle under relatively stable consumer prices. A policy designed to offset some shocks may contribute to realizing sustainable economic growth even if it means tolerating some price fluctuations in the short run.

There are two possibilities regarding the relationship between economic growth and volatility of economic fluctuations: one is that economic fluctuations lead to high growth if the cause of such fluctuations is technological innovation; the other possibility is that they reduce growth and investment by increasing uncertainty about future economic conditions. Some empirical evidence seems to support the latter view, although it does not necessarily follow that policy makers must smooth out economic fluctuations caused by technological innovation.³ In short, identifying the cause of shocks becomes crucial for implementing proper economic policy.

A standard solution to this policy problem is to distinguish between demand shocks and supply shocks, and then to determine appropriate monetary policy according to the cause. In practice, however, it is sometimes difficult to distinguish between demand and supply shocks; to do so, some additional information such as the markup between production costs and product prices becomes necessary. For example, even if product prices are stable, production costs are not necessarily stable; and if the markup or profit fluctuate widely, so does output volume and investment. This magnifies the business cycle and increases uncertainty about future economic conditions, which undermines the economy's ability to achieve sustainable economic growth. Therefore, a central banker should pay close attention to price-cost movements in determining monetary policy. The importance of price-cost movements has been suggested from both an empirical and a theoretical⁴ point of view. Economists who emphasize historical experience claim that, based on the experience of the United

States in the 1920s, monetary policy should be tightened even under price stability if costs are declining; it is considered as a sort of inflation when prices do not decline despite a decline in costs. According to this view, the objective of monetary policy should be the maintenance of price level consistent with the cost rather than mere maintenance of a price level. Kosai (1992) referred to Rothbard (1963) as an example of this argument.

For example, because of the yen's appreciation, general price stability can coexist with an increase in corporate profits and stock prices because the lower production costs can offset inflationary pressure stemming from increased demand. In such a case, the proponents who emphasize the importance of the cost-price relationship would argue that monetary policy should be aimed at reducing product prices in line with their production costs. Such monetary policy would help realize a price level that would be consistent with sustainable economic growth.

In fact, Japan's recent experience seems to suggest the importance of this cost-price relationship. For example, an application of the analysis of Hall (1988), Baba (1995c) finds that the marginal markup for the non-manufacturing sector significantly exceeded its trendline at the time of the yen's appreciation following the 1985 Plaza Agreement (Figure 2-1). Moreover, the movement of marginal markup appears to have slightly preceded the movement of the current profit to sales ratio (Figure 2-2). Unfortunately, it is difficult to obtain timely and accurate information on the marginal markup and to determine the acceptable extent of a change in the cost-price structure.⁵ Furthermore, there remains an important, though somewhat technical problem in distinguishing between the primary and secondary effects of a supply shock.

A related traditional idea with respect to monetary policy is to prevent an inflationary (deflationary) spiral of wage and price increases (decreases). The spiral increase in wages and prices is a typical example of inflation and the traditional response is to nip such "wage inflation" in the bud. Therefore, the appropriate policy prescription is to tighten monetary policy when an exogenous shock increases factor costs which spill over to prices as well as wages, thereby triggering an inflationary wage-price spiral. The same argument applies to an exogenous shock which triggers a deflationary wage-price spiral.

B. Caveats in the Use of the Markup and a Price Index

In reality, a purely exogenous shock like an earthquake is rather unusual, and most shocks -- even if they may appear exogenous at first -- are generally related to domestic economic developments. For example, an oil price shock, a sudden depreciation of the yen, and an indirect tax increase are often cited as examples of exogenous price shocks. However, the question remains as to if their initial impact on prices should be regarded as an exogenous supply shock because (1) an oil price increase may be partly due to a sudden increase in domestic demand; (2) a depreciation of the yen may be the result of a low interest rate policy; and (3) an increase in indirect taxes may be the result of loose fiscal policy. It is therefore necessary to examine the nature of the original shock in more detail.

A tentative policy implication seems to be that a central bank should avoid large fluctuations in output and employment as well as markups and wages originating from supply shocks while maintaining general price stability. However, the proponents of a rule-based monetary policy argue that: with long and variable lags in the effects of monetary policy, discretionary policy is only too likely to make matters worse rather than better, either in a deflationary or an inflationary direction (Laidler, 1995); and that flexible policy actions are deemed discretionary, and will produce an inflationary bias. Since the first issue is discussed in Professor Laidler's paper of this conference, the latter issue will be discussed in this paper.

In addition to the examination of the above cost-price relationship, the reliability of a price index is another important issue that needs to be addressed in considering the operational definition of price stability. There is a substantial accumulation of research in the United States concerning (1) the extent of a bias in CPI and (2) the cause of such a bias (introduction of a new product, a quality change due mainly to technological innovation, problems in the weighing method and price index formula, a shift in the retail location from high-priced downtown shops to low-priced suburban shops, etc.). This is an important issue because a bias in the price index could result in a substantial overestimation of inflation and an underestimation of real growth (Shiratsuka, 1995a, 1995c, 1995d; Shiratsuka and Kuroda, 1995).

However, the policy implications of such a bias must be examined very carefully. For example, if an upward bias is created by a quality change associated with a new product or technological innovation, a lower product price and higher profit can coexist. Such a bias in the price index is not necessarily deflationary from the macroeconomic viewpoint, even though it does not accurately represent the cost of living for consumers. In this case, a central bank does not have to offset such price decline, taking into account the bias. Thus, it would be a mistake to jump to the conclusion that an upward bias in measuring the cost of living for consumers immediately leads to a deflationary bias in monetary policy.

The policy implications of a bias in the price index may differ across countries and across time. For example, in the United States, the issue of a bias in CPI is recently discussed in terms of its impact on tax revenue and government expenditure. Chairman Greenspan of the Federal Reserve Board stated in the Senate Budget Committee that because CPI had an upward bias, government expenditures indexed to it should be reexamined thoroughly by professional economists instead of being automatically indexed along with the increase in CPI. He listed the following factors that may produce an upward bias in CPI: (1) the use of fixed weights which ignores the substitution effects of relative price changes, (2) the appearance of many discount stores, (3) difficulties in measuring improvements in product and service qualities, and (4) sampling lag for including new products, such as PCs and video-cameras, in the CPI basket (Greenspan, 1995). O'Neill, Director of the Congressional Budget Office (CBO), stated that the upward bias in CPI is estimated to be about 0.2–0.8 of a percentage point; and that, in view of the need to restrain government expenditures, recommended to review the methodology of determining inflation-indexed expenditures.⁶

C. Nominal GDP Targeting and Money Supply Targeting

Another approach to monetary policy aimed at realizing sustainable economic growth is nominal GDP targeting. The proponents argue that nominal GDP, rather than money supply, should be an intermediate target for monetary policy. They point out that the average rate of nominal GDP growth necessary to yield a desired rate of inflation can be more accurately determined than that of

money supply; that the maintenance of steady nominal GDP growth has better automatic stabilization properties in response to some kind of shocks; and that the operation of nominal GDP targeting has greater immunity to regulatory changes and technological innovation in the monetary and financial sector.⁷

However, some potential problems of nominal GDP targeting can be pointed out: (1) nominal GDP is difficult to control by monetary policy; (2) nominal GDP targeting tends to be inflationary if a government forecasts higher growth than warranted, but a central bank should nevertheless use this forecast as a target; and (3) nominal GDP data are available only after a significant time lag. In addition, even if nominal GDP targeting is to be adopted, it does not mean that money supply becomes irrelevant. In fact, the correlation between M2+CDs and nominal GDP in Japan appears to have strengthened since 1990 even though that between money supply and the general price level -- which the monetarist emphasized -- has broken down. If so, nominal GDP targeting may strengthen the importance of money supply as an information variable for nominal GDP that is available in a timely manner.

Furthermore, apart from a nominal GDP targeting approach, it could still be argued that stable money supply would contribute to achieving sustainable economic growth by preventing itself from becoming a source of monetary disturbances that could develop into real disturbances in the financial sector. For example, Japan's experience of the bubble economy in the late 1980s suggests that when asset prices are sharply rising under price stability, restrictive monetary policy to stabilize the growth of monetary aggregates might be appropriate even if it might mean a fall in prices owing to the price reduction effect of the yen's appreciation.

Since the latter half of 1990, the annual growth of M2+CDs has declined significantly from a double-digit figure to a negative one against the background of the slowdown in the Japanese economy. We have heard diverse arguments as to whether such a dramatic decline has provided useful information regarding the contraction of actual economic activity; some argue that the observed decline was an inevitable reaction because the level of monetary aggregates had reached a high level in mid-1990 due to the successive high annual growth since the late 1980s. However, the view which relates

large decline in the growth of monetary aggregates to the contraction of economic activity became dominant as the economy turned out to be more stagnant than anticipated.

Nonetheless, even if money supply plays an important role in monetary policy, financial innovation makes money supply an illusive concept because the appropriate measure of money supply changes over time.⁸ Therefore, a central bank that announces a money supply range as an intermediate target and commits itself to that target will risk losing credibility. For example, it may end up making policy errors by stubbornly committing itself to a target or it may have to frequently revise the target in view of changing economic conditions. Either way the central bank will lose credibility, making it more difficult to conduct effective monetary policy. The decision of many central bankers to adopt an inflation-targeting approach with escape clauses seems to have been influenced by such a consideration.

IV. Monetary Policy and the Independence of a Central Bank

In the preceding sections, we have argued that the ultimate objective of monetary policy is to achieve sustainable economic growth; and that a central bank should pursue this objective by stabilizing prices and responding to exogenous shocks in such a way that it does not undermine the economy's ability to achieve sustainable growth. Conducting monetary policy toward this goal will require careful examination and use of information variables such as price markups and money supply.

The next question is how and under what conditions a central bank can achieve the monetary policy objective most effectively. "Rules versus discretion" in the conduct of monetary policy, has been the well-known approach adopted when discussing these questions. In recent years, however, attention is focused on an empirical study of the relationship between the independence of a central bank and success in attaining the monetary policy objective.⁹ A typical argument is that the more independent a central bank is, the lower inflation will be.

If it is indeed the case that greater independence of a central bank raises its credibility, which in turn lowers the cost of reducing inflation, then strengthening independence would be a "free lunch" for a central bank pursuing the policy objective of price stability without any serious economic costs.

The independence of a central bank is also increasingly recognized as a very important issue by policy makers. For example, with a view to the scheduled establishment of the European System of Central Banks, some European countries have strengthened the independence of their central banks since the agreement of Maastricht Treaty. In the United Kingdom, which left the Exchange Rate Mechanism, the Roll Committee of the Centre for Economic Policy Research (CEPR) and the Treasury and Civil Service Committee of the House of Commons published reports in October and December 1993, respectively, proposing the independence of the Bank of England from the government. In the United States, active discussions are under way regarding reform of the Federal Reserve System, including the publication of the minutes of the Federal Open Market Committee.

Two important questions emerged from these discussions: First, what is the relationship between the argument of the need for the independence of a central bank and the traditional debate of "rules versus discretion" in the conduct of monetary policy? Second, what is the optimal institutional framework which makes independent central bank consistent with the framework of democratic controls and institutions? In the following sections, we will discuss the conduct of efficient monetary policy and central bank independence for the purpose of realizing non-inflationary sustainable economic growth.

A. Reasons for Central Bank Independence

There are various reasons why central bank independence is necessary. The independence of a central bank should be examined from a broader perspective, though in this paper we review only some of the recent discussions among academic economists.

Recent advocates of greater central bank independence often base their arguments on the empirical finding that inflation tends to be lower in countries which have an independent central bank (Figure 3). The report of the Roll Committee also points out this fact as well as that of the weak correlation between the degree of central bank independence and economic growth (Figure 4), and argues that strengthening the independence of a central bank provides a costless way to reduce inflation without adversely affecting long-term growth.

Nevertheless, it is very difficult to confirm this proposition empirically. Even the interpretation of Figures 3 and 4 needs reservation. First, there are too many ways to quantify the degree of central bank independence. Second, the negative correlation between the degree of central bank independence and the rate of inflation may not prove that there is a causal relationship. For example, it may be the case that while those people holding strong anti-inflation sentiment may give the central bank full backing for its independence, they may at the same time vote for the government which supports an anti-inflationary economic policy. In this case there would be a negative correlation between the degree of central bank independence and the observed inflation rate; but no causal relationship between the two would exist. Third, the report of the Roll Committee seems to imply that there is no relationship between inflation and growth or between monetary policy and growth. However, some of the recent empirical studies found a negative correlation between inflation and growth rate of total factor productivity and income per capita. There are also studies which find a positive correlation between the degree of central bank independence and the growth rate of income per capita, conditioning on other factors such as the level of education and terms of trade which are both known to affect growth performance.¹⁰

B. The Task of an Independent Central Bank

The question of whether the independence of a central bank should be strengthened must be discussed in line with the policy objective of a central bank, which we dealt in the first part of this paper. The reports of the Roll Committee and the Treasury and Civil Service Committee of the House of Commons propose that the primary or single objective of monetary policy should be to maintain price stability. Many European countries that have adopted an inflation-targeting approach to monetary policy hold the same view.

If the objective and the task of a central bank can be agreed upon as maintaining price stability, then the central banking system should be designed to achieve that objective most effectively. The proposal of the Roll Committee offers an example: that is, to set the single objective of the central bank as maintaining price stability, adopt an inflation-targeting approach to monetary policy, and let

the professionals in the central bank formulate and implement monetary policy to achieve that objective.

An important reason why such a monetary framework may present an effective way to control inflation is that the public can believe in the objective of price stability because it is explicitly presented as the single objective of a central bank.

This point has been discussed among economists in the context of the "rules versus discretion" with respect to the conduct of monetary policy. Economists in favor of rules argue that a central bank can bring about a better economic outcome by committing itself to a fixed policy rule that is designed to control inflation, thereby leaving no room for adopting a time-inconsistent policy. The institutionalization of an inflation-targeting approach to monetary policy and the governor's contract with the government or Parliament may be viewed as an example of such "commitment technology."

However, the report of the Roll Committee proposes that with approval of Parliament, the government can temporarily stop the central bank from pursuing the policy objective of price stability. This implies that the Committee recognizes the importance of examining the nature of shocks to the economy from the viewpoint of effective monetary policy, even though inflation might not affect the growth rate in the long run. In fact, few would argue to keep the hands of a central bank tied all the time even in the face of large exogenous shocks to the economy.

V. How to Establish Policy Credibility: Four Main Approaches

We will now restate the guiding principle for monetary policy and relate it to the policy objective and the institutional framework of an effective central bank. The starting point is the recognition that offsetting price changes originating from supply shocks may impede the achievement of sustainable economic growth because they magnify output volatility and increase investment uncertainty. Therefore it seems appropriate for a central bank to accommodate supply-induced price shocks while offsetting demand-induced price shocks to maintain price stability. With this guiding principle in mind, the next question is what is the best way to secure credibility of a central bank's

commitment to price stability while realizing the ultimate policy objective of sustainable economic growth. In this section we will examine the four main approaches: (1) the inflation-targeting approach, (2) the state contingent rule approach, (3) the conservative central banker approach, and (4) the "option to override the policy rule" approach.

A. The Inflation-targeting Approach

One possible approach is to target an inflation rate without any escape clauses. This helps establish credibility that the central bank will stabilize the general price level. However, it increases the risk that supply shocks will disturb the real economy since no flexible price adjustment to supply shocks is possible. Therefore, the social cost adhering to a strict inflation-targeting approach can be very large in some cases.

Instead of a final target such as inflation, policy commitment may be directed toward an intermediate target such as money supply. One advantage of monetary targeting is that it can enhance credibility of a central bank's commitment to price stability by maintaining stable money supply while allowing price flexibility so that the market mechanism can appropriately respond to various kinds of shocks.

In fact the Bundesbank, which has gained high credibility for its anti-inflation stance, continues its commitment to maintain stable money growth. The Swiss National Bank also adopts a similar policy approach. These examples seem to suggest an importance of money supply in maintaining the credibility of the policy commitment to price stability.

In this connection there is an argument in Japan that if the Bank of Japan had committed itself more strongly to maintain stable money growth after the 1985 Plaza Agreement, it could have avoided the subsequent asset price bubble, the large swing in the business cycle, and the instability of financial system. However, there are important differences between the German and Japanese arguments for money supply targeting. First, if there is a stable relationship between money supply and inflation, monetary targeting and inflation targeting become equivalent in the long run.¹¹ The Bundesbank's policy is based on this idea. In contrast, the above-mentioned Japanese case happened while there

was a divergence between the developments of money supply and price.

Furthermore, in many countries, including Japan, the presumed stable relationship (cointegration) between money supply and inflation is questioned. For example, Soejima (1994, 1995) has examined the long-term relationship between money supply and inflation in Japan, taking into account some structural changes. His studies presented a negative conclusion. It is widely observed in many countries that financial innovation has brought instability in the money demand function, and that money supply control is becoming more difficult to achieve through manipulating short-term interest rate instruments. Instability of the money demand function implies that exogenous shocks include financial innovation, which directly alters the relationship between money supply and inflation.

B. The State Contingent Rule Approach

The state contingent rule provides one possible way to avoid the disruptive effects of supply shocks while at the same time maintaining a rule-based and time-consistent monetary policy. The state contingent rule specifies a complete set of state contingent plans for all possible exogenous shocks. In fact, those countries which have adopted inflation targeting have also instituted a state contingent rule and/or decided to exclude such potentially volatile prices as food and energy prices from the price index used as an inflation target.

For example, in New Zealand, the state contingent rule explicitly allows a temporary divergence from the target price range when the price increase is initially caused by such shocks as a change in indirect tax rate or a change in the terms of trade, or caused by such emergencies as a natural disaster or spread of livestock disease. In such an event, a new target range of inflation has to be fixed immediately. In Canada, the rule also allows a departure from the target price range when faced with big supply and demand shocks such as a natural disaster or sharp increase in oil prices.

Although the idea of a state contingent rule is attractive, it becomes necessary to distinguish the sources of various shocks for policy purposes, and a natural classification seems to be between supply and demand shocks. Since monetary policy is used to control aggregate demand, it seems appropriate that it be aimed at offsetting demand shocks while allowing some price increases if they

are caused by supply shocks.¹²

Nevertheless, in practice, it is often difficult to distinguish between supply and demand shocks. For example, a price shock caused by an exchange rate change can be classified as either a demand shock or a supply shock, depending on the source of the exchange rate change. It will be a demand shock if the exchange rate change is caused by domestic demand-pull inflation, and a supply shock if the change is caused by innovation in an export industry. Furthermore it is often difficult to identify the source of an exchange rate change. In such a case, it becomes necessary to check the nature of a shock by examining the movement in the cost-price relationship. Naturally, the central bank prefers to maintain a certain degree of discretion regarding choice of an appropriate monetary policy while examining the exogenous shock carefully. As a result, the question of how to maintain the credibility of monetary policy still remains.

An ideal situation will be where a central bank has made the right policy decisions in the past and the public has confidence in its ability to effect appropriate monetary policy. In this case, the central bank can enjoy a good reputation and maintain credibility in its discretionary monetary policy to bring a desirable economic outcome, without explaining its commitment to maintain price stability. However, a central bank is not an omnipotent organization that makes no mistakes. And even if it had not made any mistakes in the past, it does not follow that it will not make mistakes in the future. Indeed, a single mistake could easily demolish any reputation that has been built up.

One possible solution to this credibility problem is to publicize the policy analysis and decision-making process of the central bank, and to demonstrate the time-consistency of its monetary policy, which is free from short-sighted policy change to temporarily boost output and employment. In other words, if the fundamental argument for the central bank's independence is to improve monetary policy by enhancing the credibility of its commitment to maintain price stability, then the same argument also requires enhanced transparency of the decision-making process as it relates to discretionary monetary policy.

This requires disclosure of information that is necessary to explain the central bank's policy action. Such disclosure will benefit the central bank so long as its policy action is based on a clear

objective and is backed by solid economic analysis. Instead of weakening the effectiveness of a policy action, disclosure should enhance the credibility and effectiveness of monetary policy just as it improves the reputation of a corporation in the capital market resulting in lower capital costs for that corporation.

Traditionally, the central bank's stance with regard to the conduct of monetary policy can often be described as "a policy action without apology." This practice is in complete opposition to the above argument for disclosure. One possible reason why this practice was prevalent in the past is that the central bank used to regard its primary role as being the "lender of last resort" rather than as a "maker of monetary policy"; and therefore it was very cautious about disclosing information which might have caused a "run on a bank." This consideration is still relevant to some extent, and therefore a central bank cannot disclose all the information it has.¹³

C. The Conservative Central Banker Approach

The main argument against a state contingent rule is that constructing a complete set of all state contingent plans is impossible in practice, and consequently monetary policy must be either based on a simple policy rule or the discretion of a central bank. Although some countries which adopt inflation-targeting approach such as New Zealand have a state contingent rule that distinguishes between supply and demand shocks, it is not possible to describe all possible contingencies *ex ante* or to verify them *ex post* because an actual economy is constantly subject to *unexperienced* shocks. If so, what kind of policy approach is desirable in a situation where a state contingent rule is always incomplete?

One idea is to incorporate a mechanism in which a central bank can flexibly respond to certain shocks that may adversely affect the achievement of sustainable growth while maintaining credibility of its policy commitment to price stability. The idea of a "conservative central banker" by Rogoff (1985) represents such an example. He has shown that it is possible to improve economic welfare by reducing inflation bias by delegating the formulation and implementation of monetary policy to a conservative central banker who puts relatively high priority on maintaining price stability. This

strengthens the case for enhancing the independence of a central bank because the conservative central banker who put high priority on price stability can produce better inflation performance than the government which must reflect the preferences of the general public.

D. The "Option to Override the Policy Rule" Approach

The report of the Roll Committee attempts to strike a balance between rules and discretion in the conduct of monetary policy through the following proposal: that the government decides the ultimate objective of monetary policy, but leaves the choice of monetary instrument and its target to the discretion of the central bank; and that the government can temporarily override the central bank in an emergency. Although this is a kind of state contingent rule, it may be better characterized as an escape clause which defines the condition for temporary reversion of monetary control to the government. The purpose of this proposal is to maintain the credibility of the central bank's commitment to price stability by making it explicit that the government is responsible for the temporary departure from price stability in an emergency.¹⁴

Granted that in a democratic world, the government should retain the option to override the central bank, the important question remains as to under what conditions and how this option should be exercised. In view of the argument of Rogoff (1985) that emphasizes the advantage of delegating the conduct of monetary policy to a conservative central banker, it seems undesirable to use an overriding option too frequently because the central bank should be by nature more anti-inflationary than the government. It is therefore necessary to limit the use of that option to only very serious emergencies because a monetary policy which the government regards as optimal is likely to introduce an inflationary bias in the long run. The Roll Committee seems to hold the same view. But if this is the case, it can be argued that it may not be necessary to explicitly introduce the overriding option in a central banking act itself; instead, the government may choose to revise provisions to override monetary policy in the case of a real emergency. This would reduce the potential risk of inflation by limiting the undisciplined use of the overriding option.

VI. Concluding Remarks

The main arguments of this paper may be summarized as follows:

(1) The ultimate objective of monetary policy is to improve the economic welfare of the people. This requires achieving non-inflationary sustainable economic growth. Price stability is a necessary but not sufficient condition for achieving sustainable economic growth.

(2) Therefore, it becomes necessary not only to maintain price stability but also to check the underlying situation behind such price stability. For example, even if the general price level is stable on the surface, an excessive boom and asset price inflation might be developing together with a rise in profit margins. In this case, monetary policy needs to be tightened even if it might lead to a decline in the general price level. Conversely, monetary policy needs to be relaxed in the opposite case.

(3) In more general terms, within the general condition of price stability, the guiding principle of monetary policy should be to offset a price increase originating from the demand side while allowing some price increases originating from the supply side. When it is difficult to distinguish between supply and demand shocks, this guiding principle needs to be supplemented by an analysis of the cost-price relationship.¹⁵

(4) Potential problems in conducting monetary policy according to this principle are that it ignores various lags and uncertainties, and may weaken the credibility of the central bank's commitment to maintain price stability by allowing price increases in some cases, thereby introducing an inflationary bias to the economy.

(5) In order to avoid the latter problem, the following four main approaches were discussed: (a) the adoption of inflation or monetary targeting; (b) the use of a state contingent rule; (c) the delegation of the responsibility of monetary control to an independent and conservative central bank; and (d) the adoption of a non-inflationary monetary rule with a governmental option to override that rule. Since they are not mutually exclusive, we can combine some of these approaches. In fact, combination of inflation targeting and the independence of the central bank are now practiced in European countries, with some countries additionally adopting a state contingent rule. Effectiveness

of these approach deserves attention in the coming years.

(6) In any case, central banks can never gain automatic credibility unless they make no mistakes. One effective way to gain credibility of central banks and its policy is to publicize the information that is necessary to understand policy actions. As long as such actions are aimed at achieving a clear objective and are backed by solid economic analysis, transparent decision-making process of monetary policy will enhance the central banks' credibility and its effectiveness in conducting monetary policy, just as disclosure of financial condition improves the reputation of a corporation in the capital market and induces lower capital costs.

Walsh (1993) and Persson and Tabellini (1993) have shown that a contract between the government and the central banker in which the central banker's salary declines in proportion to inflation can attain the first best equilibrium. But, in reality, it is not easy to apply this well-known scheme to the real world. Goodhart (1994) explains what will happen. "As an external adviser to the Reserve Bank of New Zealand before the 1989 Act, I advocated relating bonus payments to senior officials to the outcome, relative to the target. Although many thought that such a scheme had been introduced, it was actually rejected on the presentable argument that it would evoke headlines such as 'Governor makes \$500,000 by taking action to throw 500,000 out of work'".

These examples indicate that an important future research topic is to narrow the gap between actual behavior and theoretical analysis.

ENDNOTES

1. Former Governor Mieno of the Bank of Japan stated in May 1994 as follows: "It goes without saying that the central bank's missions are (1) stabilizing the value of money; and (2) maintaining and fostering the financial system; in other words, to achieve price stability and financial system stability. 'Price stability,' in this case, does not mean stability of current price indices. There can be stability of prices in the medium to long run only when the economy is on a well-balanced and sustainable growth path. Therefore, one of the objectives of monetary policy should be to realize non-inflationary sustainable economic growth from medium- to long-term perspectives (Mieno, 1994)." This statement clearly indicates that the Bank of Japan views its policy objective of price stability from the long-term perspective of achieving sustainable economic growth.

2. Goodfriend (1995), however, suggests that moderate inflation may be desirable for monetary policy that focuses on markup rate as the main economic indicator.

3. Ramsey and Ramsey (1994), for example, present some empirical evidence on the relationship between a long-term growth rate and a short-term growth variation.

4. There are two theoretical arguments which employ a framework of imperfect competition.

The first is represented by menu-cost theory and near-rationality theory. The essence of these theories is that the existence of menu cost prevents firms from changing producer prices consistent with its marginal cost structure, thus causing a huge social loss. In such a case, monetary policy can allow firms to change prices by raising the opportunity cost of not changing prices. That is, monetary policy can improve social welfare by directly controlling the mark-up ratio of firms through an appropriate shift in the demand curve which firms confront.

The second is an argument regarding the social welfare cost of inflation under mark-up pricing. Goodfriend (1994) argues that when there is mark-up pricing in goods markets, the social welfare cost of inflation will be equivalent to that under perfect competition, as suggested by Lucas (1993), multiplied by the marginal mark-up ratio. In this argument, the monetary authorities have the optimal choice of tightening monetary policy and bringing down inflation even under low and stable inflation, if they observe or anticipate that the mark-up ratio has remained high.

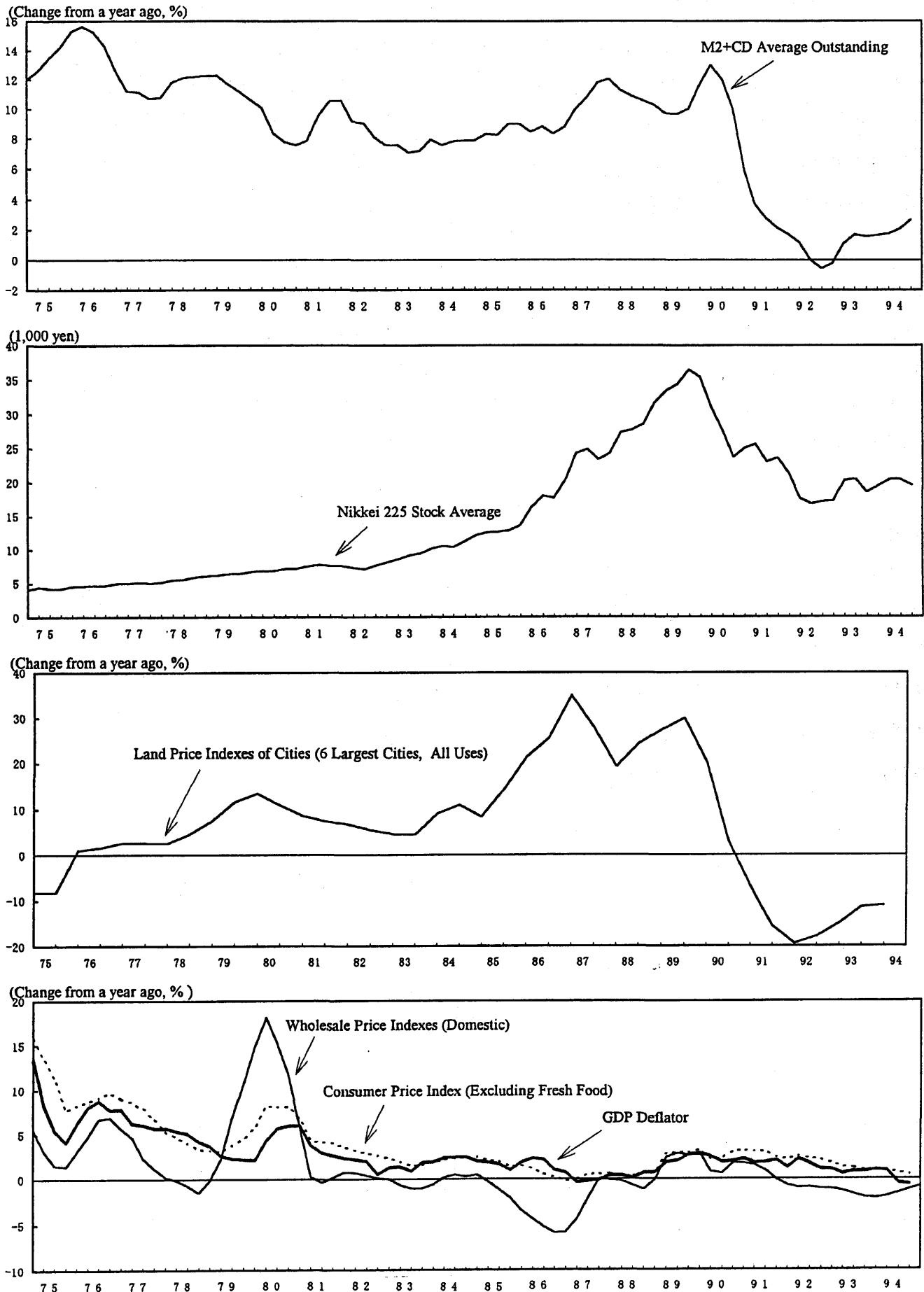
For further discussion, see Baba (1995).

5. The estimated markup in this paper uses industrial data from Capital Stock and National Income Statistics, and therefore suffers from the problem of significant time lag.

6. In addition to the CBO estimate, there are other estimates (such as 0.5–1.5 and 1.0–1.8 percentage points) on the upward bias in CPI in the United States. See Shiratsuka (1995c).

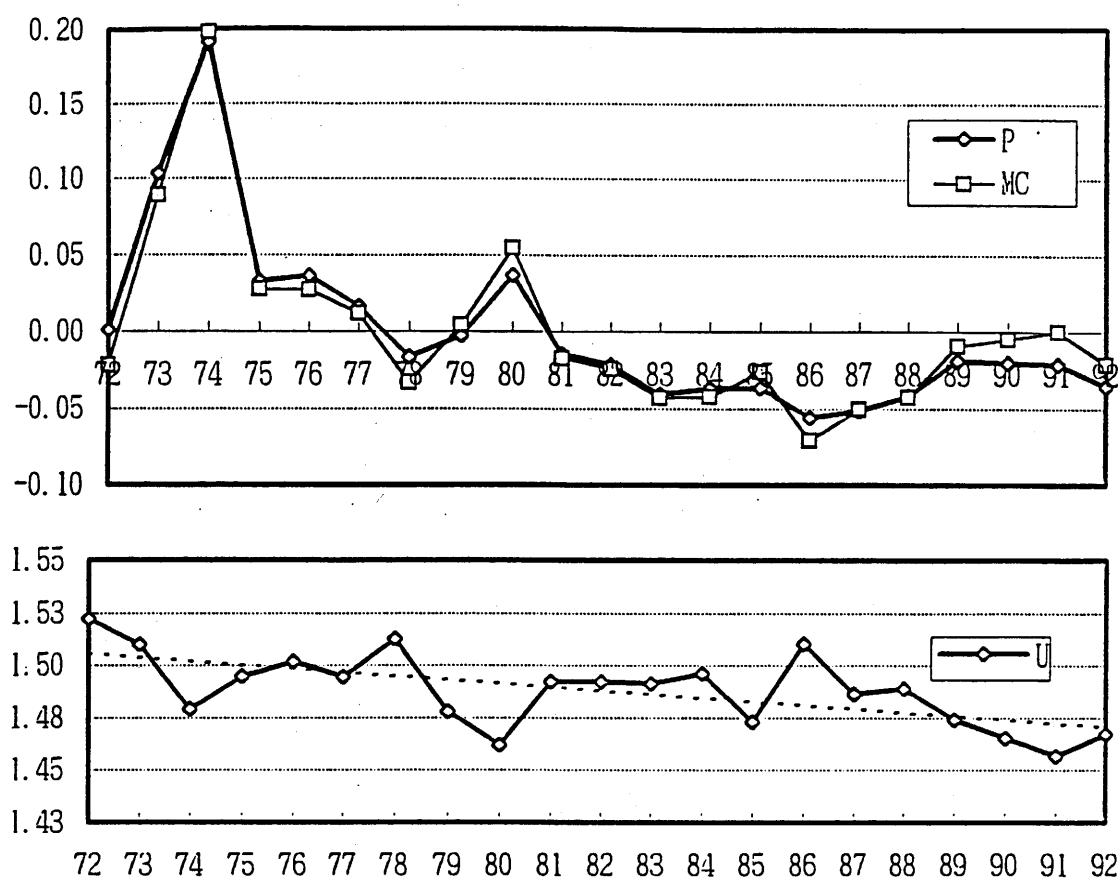
7. See McCallum (1993), for example.
8. Taylor (1995), for example, referred to this problem: "Much has been made of the unreliability of any one measure of the money supply because of recent changes in technology and regulation. In fact, the demand for money function—at least for the M1 and the M2 definitions—seems to have shifted substantially in recent years."
9. See Cukierman (1992) for example.
10. See Fischer (1993), Englander and Gurney (1994), and Cukierman et. al (1994), for example.
11. See King (1995). It should be pointed out, however, that even if money supply and inflation have a stable relationship, money supply may be a better informational variable for monetary policy than inflation since movement of the former tends to precede the latter. Even if there were a perfect relationship between the rate of money supply and inflation, monetary targeting and inflation targeting would be operationally different from the viewpoint of implementing monetary policy.
12. The Reserve Bank of New Zealand explicitly adopts this view. See Archer (1995).
13. There is also some academic literature that argues for the advantages of central bank secrecy. For example, in a situation where a central bank sometimes considers whether it should put priority on employment over price stability, Cukierman and Meltzer (1986) shows that such a central bank has an incentive to adopt stimulative policy action that is less likely to reveal its policy goal to the public.
14. For a theoretical justification of this approach, see Lohmann (1992).
15. New Zealand's inflation targeting may be viewed as an application of this monetary policy principle.

Figure 1 Money Supply and Prices



Sources: "Annual Report on National Accounts," Economic Planning Agency, "Consumer Price Index," Management and Coordination Agency, "Economic Statistics Monthly," Bank of Japan, "Land Price Indexes of Cities," Japan Real Estate Institute.

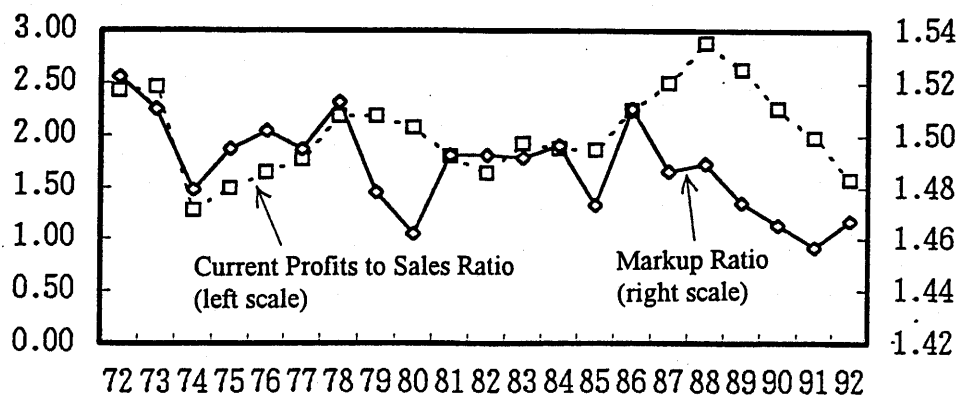
Figure 2-1 Markup Rate for the Non-Manufacturing Industry



P: Price
 MC: Marginal Cost
 U: Markup Rate

Source: Analysis by Baba (1995c)

Figure 2-2 Markup Rate for the Non-Manufacturing Industry and Current Profits to Sales Ratio



Source: Analysis by Baba (1995c)

Figure 3 Inflation Rate and Central Bank Independence (1955-1988)

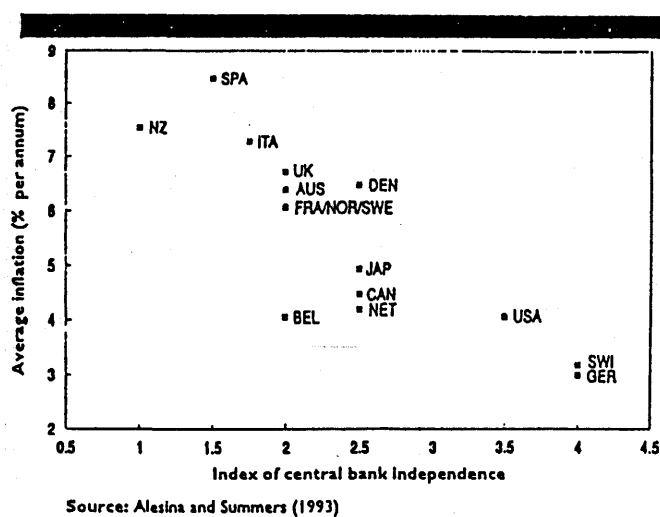
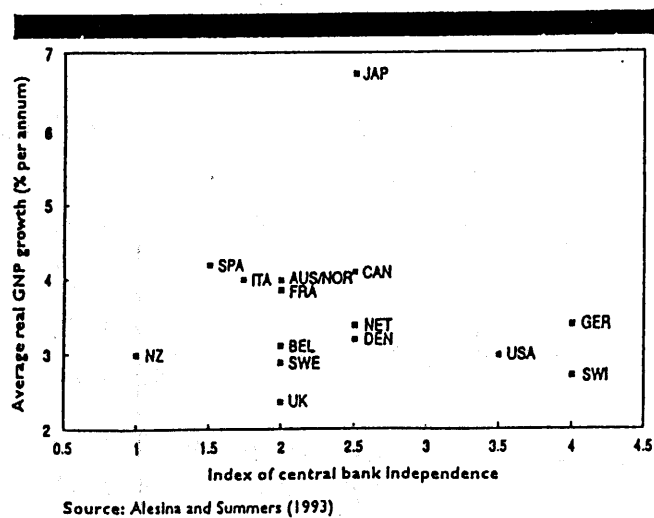


Figure 4 Economic Growth and Central Bank Independence (1955-1988)



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