Policy Assessment of the European Central Bank and the Stability and Growth Pact's Echo of the Conventional Wisdom on Budget Management

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<u>Abstract</u>

This paper provides an in-depth normative analysis in two parts: 1) ECB monetary policy focusing on credibility, accountability, transparency, flexibility, and both goal and instrument independence; 2) Theoretical analysis of discrepancies of the Stability and Growth Pact rules vs. discretionary framework that is comprised of the conventional view on budget deficits and how budget deficit targeting creates a procyclical and endogenous policy.

Has the European Central Bank (ECB) use of monetary policy been successful since its operation at Stage II in meeting its ultimate policy goal of price stability and has Stability and Growth Pact's (SGP) convergence on fiscal policy created overall balanced budget allocations? Both of these questions are the heart of this paper and are analyzed in depth theoretically. In this paper, I present an analytical account in two parts: the ECB's monetary policy, focusing on credibility, accountability, transparency, flexibility, and both goal and instrument independence; secondly, the SGP's rational, its design as an explicit advocate of the conventional view on deficit management, and the advantages and disadvantages rules vs. discretion framework.

1.1 Introduction

The ECB, established by provisions of the Maastricht Treaty in 1992, enabled the "European Economic Community" to facilitate an economic unity in the implementation of monetary policy for the solidarity among European Member States. The European Community felt that one monetary policy for European Union (EU) Members would promote price stability among its members and the quantitative elimination of trade restrictions and to promote economic and social unity.
The ECB became operational as of January 1, 1999; however the euro currency became effective in January 1, 2002. There were a total of 11 countries that initially became member nations. As of 2003:01, there are 15 members of the ECB, 12 which have adopted euro as currency and 3 of which share no role in the implementation of monetary policy. Together they make up the members of the National Systems of Central Banks (NSCB), which include: Belgium, Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, The Netherlands, Austria, Portugal, and Finland.   Sweden, Denmark, and the United Kingdom are members of the European Union but are not currently participating in the single currency.

Member States that have adopted the euro as currency	Member States that haven't adopted the euro	Future Members for 1 Jan 2004
Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Portugal, Spain	United Kingdom, Denmark, Sweden	Czech Republic, Poland, Hungary, the Czech Republic, Slovenia, Slovakia, Malta, Cyprus, Estonia, Latvia Lithuania, and Romania

There are a total of three bodies that make up the ECB. The first two include the Governing Council and the Executive Board, which are responsible for the decision making process for the European Community. The third group consists of all 15 European Member National Central Banks, to include the NCSB's which have not adopted the euro as currency.
The Executive Board of the ECB are a decision making body comprised of the President and Vice-President and four governors who are appointed by the European Member states that have adopted the euro as currency and have a "recognized standing and professional experience in monetary and banking matters", in accordance to Article 109f of the Maastricht Treaty. Executive Board members all have a nonrenewable term

of eight years and are each set to retire in staggered years. The following are the dates that each Executive Board member is set to retire:

1. **Jean-Claude Trichet;** President, scheduled November 2011.
2. **Lucas D. Papademos;** Vice President. His term expires on 31 May 2010.
3. **Gertrude Tumpel-Gugerell;** Her term expires on 31 May 2011.
4. **Otmar Issing;** His term expires on 31 May 2006.
5. **Tommaso Padoa-Schioppa**; His term expires on 31 May 2005.
6. **Eugenio Domingo Solans;** His term expires on 31 May 2004.

The Executive Board prepares guidelines for the Governing Council under the discretion of the President of the ECB. The executive Board is responsible for "current business of the NCB's", therefore gives necessary instructions to the euro area NCBs. All Executive Board Members must be from national states, in accordance with Article 12. No member is allowed to be part of any occupation that may or may not be profitable and are required to work full time.

The second group is the Governing Council, a decision making body and comprised of the Executive Board Members and the regional governors of the of the euro area NCBs, which meets ten times a year. Currently (Nov 2003), there are a total of 18 Governing Council Members and is the most important decision making body of the ECB, because they conduct monetary policy for euro area states, by changing interest rates and conducting open market operations. Their major duties include; adopt guidelines for monetary policy conducive to price stability, formulate and forecast monetary policy games for the euro areas, and ensure effective policy implementation. Each member has a renewable term of eight years, five of which is required.

The third group is the General Council, which is not a decision making body of the ESCBs, thus has no influence on monetary policy. The Governing Council consists of the President and Vice-President of the ECB and all 15 member states, to include the NCB's which have not adopted the euro as currency. There are a total of 17 members, 3 of which have not yet adopted the euro as currency as of November 2003, therefore containing no responsibility in monetary policy. They do, however, render statistical information that helps to facilitate future inflation forecasts in the medium term and other useful data to pursue price stability. The General Council will only be in existence as long as there are EU member states that have not adopted the euro as currency.

1.3 Central Bank Independence

In the literature and empirical evidence argues that politicians use monetary policy in ways to increase their popularity in an effort to get reelected. In doing so, politicians try to gain popularity by finding ways to increase levels of employment by playing with the "levers of monetary policy." As a result, this can have extremely devastating impacts on the economy with an ever higher rate of inflation and higher unemployment. This is what is directed to economists as a part of the "central bank credibility problem" that was argued by Robert Barro and David Gordon in 1983 ("Positive Theory"). One way to build credibility is to have central bank independence.

If central banks aren't directed by myopic politicians, then the public is less likely to feel a sense of deception.

There has been a majority consensus that the ECB is the most independent central bank that is operational today. Under Article 107 of the Maastricht Treaty, the ESCBs, which include the ECB and the NCBs, are not allowed to "seek or take instructions from community institutions or bodies, from any government of a Member State or from any other body." This prevents politicians to play with "levers of monetary policy" in an attempt to seek popularity and to prevent activist policies.

1.4 Budget Independence

To illuminate central bank credibility, the ECB has its own budget, therefore decreasing political influences and making it more independent. For example, in some countries governments have had accounts with the central bank and can withdraw from them anytime, effectively decreasing the money supply at there discretion. This can have
negative impacts to the economy by "tightening" monetary policy in an order to gain political popularity for reelection. In the event that the central bank does not comply with political pressures, governments may potentially require central banks to buy government bonds without public knowledge as a penalty for non-compliance. The effects are equivalent on the money supply.

Budget independence is strictly enforced and covered under the statute of Article 199 and 201 of the Maastricht Treaty stating, "Without prejudice…the budget will be financed wholly from own resources." This acts as an important barrier to political influence and promotes central bank credibility. This prevents external pressures from those who might charge the bank with a "penalty rate" for non-compliance by altering the budget (The Monetary Policy, pp 12).

1.5 Discretionary Framework, Rather than Rules

For optimum framework, a central bank needs to lay down its approach and design. A framework is necessary so that it puts a setting on monetary policy and how it becomes implemented. The framework of the ECB is distinguished as a "discretionary" monetary policy, because monetary authorities have no initial restrictions on the actions that the ECB can take to achieve its policy goal of price stability. Monetary authorities are faced with the power of deciding without an established guideline or regulation superimposed on them, hence more preemptive and proactive policy rather than reactive.

A discretionary framework enables many benefits to the ECB, one to include monetary authorities to be more proactive at fighting future inflation. The President of the Executive Board, Willem Duisenberg stated, "Forecasts of economic activity and inflation in the euro area can also contribute to the success of an appropriately forward-looking monetary policy" ("Monetary Policy in the Euro Area"). This discretionary framework then becomes more judgmental on economic conditions. For example, if there was an increase in the price of oil as a result of a temporary short run supply shock, the HCIP would gauge inflated prices among the basket of goods and services that it represents. Rather than adjust to the occurrences in the short run and creating higher

future inflation, the ECB would use its "discretion" not to take an immediate policy intervention, as opposed to rules.

Conversely, rules are more of a nonjudgmental framework that restricts monetary policy to a function of a pre-committed intermediate target, such as a monetary aggregate. Rules are more reactive to monetary policy, rather than proactive, because they tie the hands of monetary authorities to take a precommitted course of action to meet its goal objectives. Rules are statutory guidelines that direct policy makers as "semi-automatons."

1.6 The ECB's Monetary Policy Approach: Policy Goals

The ECB is established as a single monetary policy that, under the Maastricht Treaty Article 105, has a "primary objective of the ECSB shall be to maintain price stability." The Governing Council came to consensus in 1998 that the single monetary policy goal shall be "price stability shall be defined as a year to year increase in the Harmonized Index of Consumer Prices (HICP) for the euro area of below 2%" (The Monetary Policy of, pp 38).   Four years later, that policy is still in effect and has been reconfirmed by the Governing Council on May 8, 2003, however reinterpreting policy goals.

The initial goal objective needed further clarification, as recommended from ECB critics who wanted a specific time period horizon that prices stability would be conducive to monetary policy. This move created a more transparent approach, according to Executive Board Member Otmar Issing, who stated the outcome of the review strategy was to "[address] certain misunderstandings that have emerged in…communication with the public" ("Inflation Targeting: Prospects"). The new goal objective states, "Price stability is defined as a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below 2%. Price stability is to be maintained over the medium term" (ECB Press Release). The Governing Council felt that an inflation target closer to 2% is further needed to prevent such implications as deflation, rather than from a target band between 0-2%.

1.7 Intermediate Targets: The Money Supply and Inflation

During monetary policy transmission process, intermediate targets occupy a relationship between the central bank and the ultimate macroeconomic policy goal of price stability. The ECB uses two intermediate targets to facilitate price stability in the medium term, including a pre-specified quantitative target of or below 2% inflation rate and a "reference value" of 4.5% for the monetary aggregate M3. To effectively establish price stability, the ECB uses a total of three "elements" that helped to compose their strategy, two of which include what the ECB calls the "pillars" of monetary policy, which are a quantitative definition to act as a nominal anchor and an analysis of monetary aggregates with a "reference value growth" of the M3. The third element is future inflation forecasts in the medium term.

The first pillar, according to the Governing Council's 2003 consensus, is that "Price stability is defined as a year-on-year increase in the Harmonised Index of Consumer Prices for the euro area of below 2%. Price stability is to be maintained over

the medium term" (ECB Press Release). This put a nominal anchor on prices at a targeted of or below 0-2% to effectively meet their objectives of price stability.

The second pillar of monetary policy is quantitative analysis of the stock of money of the M3 monetary aggregate. The ECB issues pre-announced "reference value" target for the growth of the M3 to achieve price stability. The ECB feels that the M3 is a better analysis of money aggregates to assess, rather than looking at a much narrower monetary aggregate, like M1. The M3 covers the M1 + M2 + M3, thus analyzing real activity and liquidity problems in terms of inflation risks (Monetary Policy of the ECB, pp 49). Since 1998, the reference value has been set at 4.5% annual by the Governing Council.

There have been questions raised on targeting money aggregates with an explicit reference value, in which the ECB has never hit its target growth of 4.5%. Otmar Issing, an Executive Board Member, stated, "…we will discontinue the practice [of monetary targeting] we have adopted so far, namely that of the Governing Council reviewing the reference value in December each year" ("Press Seminar"). Money stock growth has become a less important "pillar" conducive to monetary policy since the ECB became operational, with the annual growth rates as followed:

Source: www.ecb.int

Year	Annual Growth of M3
1999	5.475
2000	4.06
2001	5.5
2002	7.15
2003 (till September)	8.2

More emphasis has then been placed on monetary policy meeting its inflation target of 2%, and less emphasis on meeting targets on monetary aggregates. Willem Duisenberg stated, "We shall not, however, respond mechanistically to deviations from the reference value for money supply growth, but shall first analyze them carefully for signals relating to future price developments. Larger or sustained deviations normally signal risks to price stability" ("Press Seminar"). This sends a clear message that targeting M3 would send the economy on the wrong path that would compromise price stability in the medium term.

M3 Growth Rate; Source Eurostat
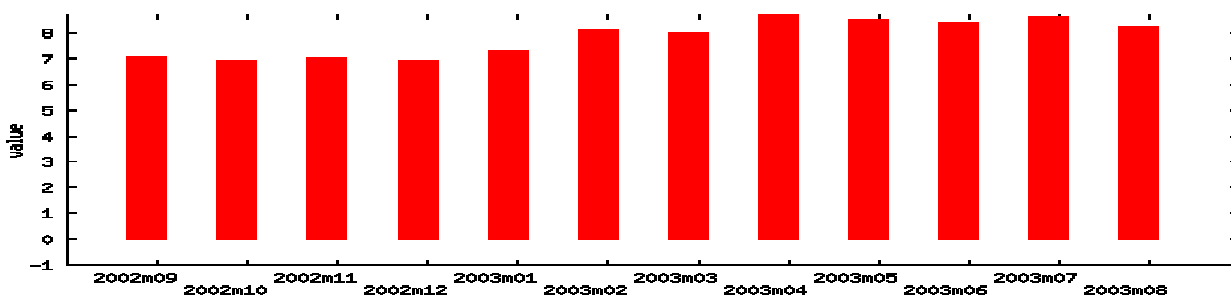
Euro Zone: Economic Community and Monetary Union

Lastly, the ECB uses a third element which accounts for forecasting future inflation forecasts. The ECB is faced with a wide degree of uncertainty throughout the euro area. The ECB gathers statistical data on all economic indicators from all NCB in order to ensure policy efficiency in the medium term. Therefore, the ECB takes on a preemptive monetary policy strategy which takes into account forward looking prices that accounts for expected inflation in the medium term. This prevents short run volatility in relative prices which cannot be controlled by monetary policy and would compromise price stability.

1.8 HICP: Nominal Anchor of the Euro Area

There is a consensus among economists and central bankers that price stability should be the number one goal and the focus of monetary policy. Periods of changes in the price levels are consistent with most economic contractions. The need for a nominal anchor puts a quantitative target on relative prices, creating a legal constraint on monetary authorities which firmly establishes a deterrent of activist policies. A nominal anchor ties down a certain price level to a specific time period horizon. Monetary authorities then have a restriction imposed on their ability to create short run expansions while inflating the economy. Milton Freedman stated their effects are of "cheap money policies", because in the long run there is no positive macroeconomic effect with nothing to show for but higher unemployment and inflation.

The Governing Council has tied price stability of the euro area to the HICP as its nominal anchor and acts as the primary measure of consumer prices within the euro area. The weights of the HICP are calculated by Member States and include the aggregate expenditure of households on a basket of goods and services. It is an assessment of inflation within the euro area by looking at increases in the cost of living for goods and services and is measured by Statistical Office of the European Communities (Eurostat), which is part of the European Commission. The following is an example of a simple breakdown of the HICP basket of goods and services (Monetary Policy of the Euro Area, pp 40):

Weights of the main HICP components, 2001

Overall index:	100.0
Goods prices (total):	**61.9**
1. Unprocessed food:	8.2
2. Processed Food:	12.3
3. Non-energy industrial:	32.1
4. Energy:	9.5
Services (total):	**38.1**

Concerns have arisen on the precision of how these goods and services are measured so that monetary policy can effectively use their intermediate targets to pursue price stability. A discrepancy that has attracted much attention is the Boskin Report of 1996, which has stated deviations in inflation of the U.S economy by 0.5 to 2.0% with a total inflation exaggeration at an average of 1.1%. As a result, what if there are lower

bound interest rates by an average of 0.5 to 2.0% and the current interest rate is 1.9%? This would imply that nominal interest rates would reach a "tyranny of zero" and real inflation rates must then decline, causing deflation.

The HICP, analogous to the US consumer price index (CPI), faces three major discrepancies of inflation bias by not accounting for an outlet substitution bias, new goods bias, and/or a quality adjustment bias (Issing, et al. pp 52-3). First, the outlet substitution bias does not take into account for household intertemporal substitutions. This creates no indication for households that change their habits by substituting to cheaper commodities from lower cost outlets. Second, the new goods biases occur when the HICP fails to account increased supply of goods and services that are available to households. This arises if a new product has been introduced and has created a new shift in demand for other goods. Third, quality adjustment bias occurs when technological improvements have been undercounted in the HICP. The HICP does not account for a commodity's "value added" changes in improvement.

In the initial stages as an Inflation Targeter, New Zealand gauged inflation by a basket of goods and services, known as the "headline" CPI, however included volatile commodities such as petroleum and energy prices. During 1996, New Zealand had a target range initially of 0 – 2%. During September with lack of controllability on inflation, New Zealand realized they had to widen the target range to 0 – 3%. It was as a result of a wave of negative short run supply shocks which increased the price of petroleum, causing an increase in the headline CPI. The central bank realized that the supply shock was temporary and concluded immediate monetary policy intervention would compromise price stability in the medium term (Bernanke, *et al.*, pp 92-3).

The central bank of New Zealand has shown use of a "headline" CPI lacks an appropriate gauge of inflation that is used as an appropriate guideline to price stability for the medium term. They have shown that a "core" CPI is more desirable, in that notoriously known volatile commodities may exaggerate and even mislead prices of other goods and services only in the short run. In the long run, however, prices go back to secular trend and price changes become smoothed out over time.

The ECB conducts monetary policy as a discretionary policy that analyzes both the "core" and "headline" HICP. The ECB has time and time again shown its effort not to adjust monetary policy strategies to short run economic shocks that would potentially compromise price stability in the medium term. Willem Duisenberg stated that the "outlook for price stability over the medium term, it is particularly important to clearly distinguish between short-term volatility and more fundamental factors" ("Introductory Statement"). The ECB during the first quarter of 2003 had a strong guage of volatility in the "headline" HICP.

"Headline" HICP: source Eurostat

euro-zone - Economic and monetary union   ■ EU-15 - European Union (15 countries)
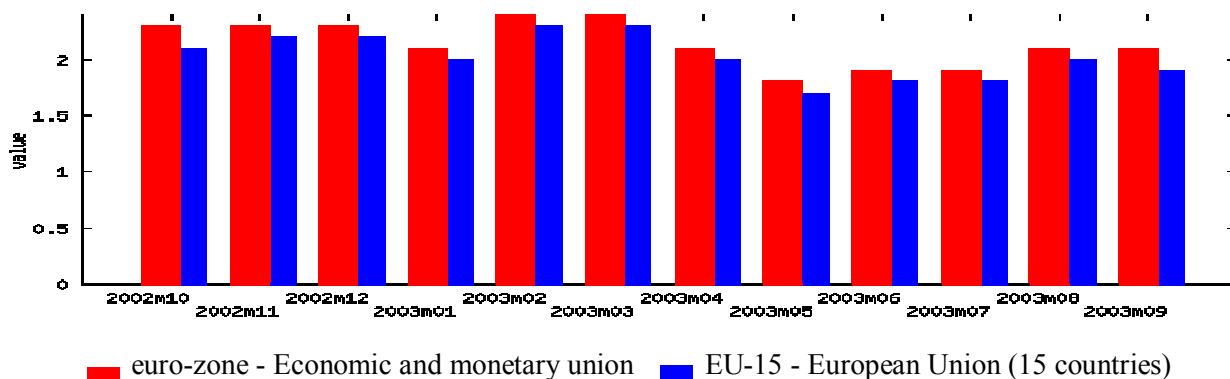
Willem Duisenberg addressed the volatility of the inflation rate of 2003:03 as a result of a short run supply shock and was transitory because of the war effort. He stated, "Looking at price developments, annual HICP inflation is estimated by Eurostat to have been 2.4% in March 2003, unchanged from February. The recent drop in oil prices is not likely to be reflected in the price statistics until April" ("Introductory Statement"). His ultimate conclusion was that the ECB would not change their policy stance and stressed their commitment to price stability in the medium term and not the short run, by looking at both the "core" and "headline" HICP.

"Core" HICP: source Eurostat

euro-zone - Economic and monetary union   ■ EU-15 - European Union (15 countries)
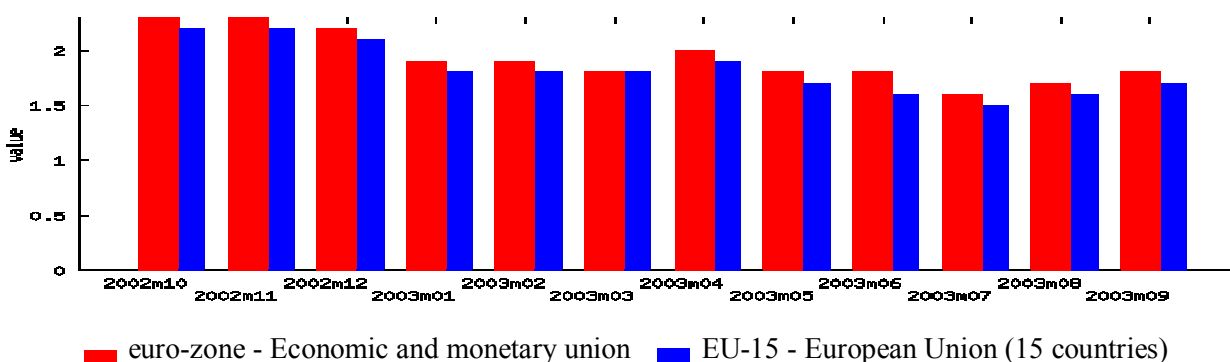
1.9 Alternatives to monetary policy

The ECB's monetary policy is a hybrid policy that has a strategy of price stability in the medium term based on "two pillars"; both an indirect Inflation Targeting and Money Stock Targeting Regime. There have been other monetary policy strategies pursued by other central banks that the ECB and EMI have considered. Of the above listed strategies, the ECB considered a total of three main strategies that was conducive to price stability in the euro area which include direct Money Stock and Inflation Targeting and an Exchange Rate Targeting Regime.

The ECB considered a designing their strategy using monetary targeting. This strategy would involve maintaining of price stability by controlling the growth of monetary aggregate by changes in the interest (which is given homogenously). The

growth rate would be pre-announced on a particular money stock (i.e. M1, M2, M3, etc.). Even though this strategy is being used, the ECB felt that it should not be used directly. Empirical evidence has found temporary price developments that have caused distortions in monetary targeting, such as a temporary increase of petroleum prices that causes transitory volatility in monetary developments.

Another alternative to monetary policy considered was a direct Inflation Targeting Regime, which as discussed is used indirectly with monetary targeting. According to Mishkin and Schmidt-Hebbel, this approach is based on 5 pillars ("One Decade of Inflation Targeting"):

1. An inflation rate that acts as a nominal anchor with a target band or range at a positive number that is slightly above zero and is absence of other nominal anchors.
2. An institutional commitment to price stability
3. Absence of fiscal dominance.
4. Policy and instrument independence
5. Transparency and accountability

Rather than looking at the growth of monetary aggregates, inflation targeting focuses on inflation itself, hence price stability on relative prices as a measure of a consumer price index. There has been substantiating evidence that inflation targeting countries have enjoyed a low nominal inflation within the medium to long term horizons. This policy strategy is easily understandable because inflation targets are pre-announced and are the focus of attention among the public as a monetary analysis of the central bank. Inflation targeting leads a highly accountable strategy to the public if it breaches an inflation target. Countries that have used this strategy take appropriate steps to communicate with the public why they have missed the pre-announced target. Bernanke, et al stated, "We believe that inflation targeting is most effective and leads to the most democratically accountable…central bank" (Bernanke, *et al*., pg 322). Although used implicitly, the ECB felt that this approach was not to be used directly for the sole purpose to build a more diversified approach to monetary policy so that the ECB can incorporate more analytical models involving the money supply.

The third strategy considered was an Exchange Rate Targeting Regime. This strategy uses a fixed exchange rate of its currency to another national currency. This strategy has historically been useful for relatively small open economies in Europe. However, the ECB decided not to pursue this policy because its use could potentially dampen price stability in euro countries because changes in the development of prices can have negative effects on domestic price levels in order to create stability in the price of exports.

1.10 Goal and Instrument independence

The ECB is a central bank of all other NCBs among the European Economic Community. The ECB has the sole responsibility of implementing monetary policy without the role of any political influences, as prescribed by the Maastricht Treaty Article 105. The ECB enjoys freedom to set and choose its policy goals and instruments, as long

as they do not deviate from objectives. Under Article 106 of the Maastricht Treaty, the ECB has direct responsibility of implementing monetary policy among other NCBs, which "shall be…governed by the Governing Council and Executive Board."

The ECB is granted with goal independence, however with limitations. Article 105 of the Maastricht Treaty governs that the "primary objective…shall be to maintain price stability". The Governing Council of the ECB decides how price stability will be determined and what time period horizon it will use as its measure. The ECB states price stability as a quantitative target of or below 2% and attaches a 4.5% "reference value" for the monetary aggregate M3. The Governing Council has the freedom to choose what time period horizon to pursue price stability. The ECB also has goal independence by having the freedom to choose and gauge price stability on indexes, such as the "headline" or "core" HCIP, or other numerical factors.

The ECB also has instrument independence, enhancing the ability to achieve policy goals by using monetary policy tools, to include control over reserve requirements, OMO, and Deposit Facilities. The ECB has sole responsibility of the Economic Community of member states and distributes currency to provide liquidity and provides a homogeneous level of short term interest rates across the euro currency spectrum.

It should be discussed that countries that make up the NCBs and use the euro have partial instrument independence. NCBs do not have control on reserve requirements and short term interest rates, as opposed to the ECB. NCBs do, however, have instrument independence on OMO at their discretion to meet liquidity shortages and enlargements. All OMO can be conducted by the ECB or in a decentralized manner and include the following operations:
1. Main Refinancing Operations
2. Longer-Term Refinancing
3. Fine Tuning Operations
4. Structural Operations

1.11 Accountability and Transparency

One might assert that accountability and transparency is one in the same, in which it's not. Accountability is a determinant for central bank credibility and the public's view for monetary policy expectations, while transparency is a "see through" policy that is understandable and is well communicated to the public. Accountability and transparency fully promotes and complements the democratic process by ensuring that the ECB is communicating effectively its intentions while being held responsible for their actions and ensuring they stand to represent the interests of the people within their economic community.

In accordance with the Maastricht Treaty, monetary policy is fully entrusted at the ECB with full independence. There are mainly two level of accountability at the ECB which consists of accountability at the European Parliament and the national/country level that is made fully transparent with various publications and bulletins. Peter Bofinger suggests it is useful to differentiate the accountability measures that a central bank makes by the following (Bofinger, pg 220-22):

1. *Ex post* accountability implies that a central bank has to justify ex post if it has been unable to reach its targets.
2. *Ex ante* accountability implies that a central bank should also be compelled to justify deviations of forecast values from target values. Such a forward looking perspective is warranted above all because of the long lags in the monetary policy transmission process.

According to Bofinger, the ECB has more of an *ex post* accountability, because ECB is accountable to the to the European Parliament by having the ECB Executive Board Members appear before them quarterly and provide extensive information on economic reporting. The ECB president of the Executive Board testifies before the Committee on Economic and Monetary Affairs of the European Parliament and explains the business of the ECB and provides answers to any questions at the Parliament's discretion. The other Executive Board members may, at their discretion, provide answers on various questions about monetary policy at the ECB.

The Executive Board members of the ECB are also accountable to the European Parliament by their job performance. Under the Constitution of the ESCB, Article 11.4 states that if "Executive Board members no longer fulfils the conditions required for the performance of his duties or if he has been guilty of serious misconduct, the Court of Justice may, on application by the Governing Council or the Executive Board, compulsorily retire him" (Constitution of the ESCB). This statute is a broad deterrent for monetary authorities to sway away from the goal objectives of the ECB and act as an incentive for them to protect the interests of the people they were delegated to represent.

Under the Maastricht Treaty, the first pillar of monetary policy uses an inflation target of or below 2% to achieve price stability. This inflation target acts as a benchmark for monetary policy performance for the ESCB and the public. This is another accountability tool, however implicitly since the ECB uses two intermediate targets; inflation and the M3 monetary aggregate. The ECB does not have such strict explicit accountability measures as some countries such as New Zealand who will retire the president of the central bank if an inflation target is breached in the medium term (Bernanke, *et. al*, pp 87).

The ECB is also accountable to national countries that make up the ESCBs. The ECB provides annual reports, quarterly reports, and monthly bulletins that emphasize accountability as a "grade report" of performance which plays an important role of a communication strategy. Given the wide audience of the ECB, each NCB publish their monthly report which states the status of their region at the national level. This dissemination of information provides important channels of information that is disseminated among politicians and fiscal authorities so that they can better devote there selves to running office and optimally managing budgetary allocation decisions more efficiently.

Future forecasts contribute to *ex ante* accountability, a role which I think the ECB lacks. The ECB has been struck with fierce criticism among the public for not publishing the board minutes of the Government Council, which meets 10 weeks in a year. Much of the public wants the ECB to share information that it possesses about economic developments. Willem Duisenberg stated, "Thus, publication of the forecasts cannot contribute to accountability. Rather, its performance in maintaining price stability in the

medium term should be used by the public to judge the success of the Eurosystem" ("Monetary Policy in the Euro Area"). Arguably, the minutes of the board serve as valuable information to the public, because it acts as a an intended path for short term interest rates and find out the true intentions of the central bank by looking at the Governing Council's voting strategy. Voting strategies of the Governing Council captures each members views and the overall competence, meeting their intended goal of price stability. This strongly contributes to ex ante accountability, by ensuring forecasts meet their targets.

1.12 Flexibility

In an environment of high uncertainty, monetary authorities must take into account theoretical reasoning of monetary policy decisions during economic environmental changes, i.e. expansions and contractions of the business cycle and short run shocks to the economy. Flexibility, which compliments a discretionary framework, should be used as an adjustment to the monetary policy stance as a response to short run phenomena in an economy's expansion/contraction and inflation paths that threaten price stability in the medium term. Flexibility, under demand shocks, has lead to "tightening" monetary policy in response to unforeseen events, such as aggregate demand shocks. Central Banks will try to stimulate the economy in an effort to meet its goal objective without fear of an increase in inflationary expectations.

The ECB has been struck with criticism on its instrument independence strategy. Questions of central bank commitment to price stability have been raised concerning the constant growth and volatility of the M3 money. The M3 growth rate has increased from 4% in 2002:03 to over 8% in 2002:10. The pre-announced value growth was 4.5%, clearly exceeding its target. The ECB states that monetary aggregates will be closely analyzed as a "reference value and not a monetary target" (Monetary Policy in the Euro Area, pp 47). This strategy then puts less emphasis on targeting M3, therefore focusing more on meeting its inflation target in order to pursue price stability and promoting flexibility.

1.13 Makeup of the ESCB Financial System

Member nations of the European Economic Community that have adopted the euro have a "Fiat Currency" that is backed by the full faith of the ECB and NCBs as a medium of exchange, comparable to the U.S. Federal Reserve. The ECB has a fractional reserve banking system because banks hold a portion of their reserves. Instead of holding all reserves, they lend them to borrowers who then purchase other goods and services. As a result, there is a money expansion process.

The ECB has a total of four players that affect the money supply: the ESCB, bank institutions, borrowers, and depositors. Of all members, the ECB has the most important role because they affect their balance sheet of assets and liabilities through conduct of open market operations. A simple graph is provided below that reflects some of the assets and liabilities of the ECB's balance sheet that was published in the ECB "Weekly Bulletin" ("Consolidated").

ECB Balance Sheet

Assets	Liabilities

1. Gold and gold receivables
2. Claims on non-euro area residents
3. Government **Securities**
    1. Equity Security
    2. Debt Security
4. Marginal Lending Facilities
	Currency in circulation
	Debt certificates issued
	Reserves

The liabilities of the ECB are currency that is in the hands of the public and reserves and is counted as the monetary base, or "high powered money." Alternatively, they are assets for depository institution, since they are a financial claim. The monetary base of the ECB is an IOU, because banks can demand payment and the ECB has to meet their obligations by providing them with currency or reserves. The balance sheet for depository institutions are as followed:

NCBs Balance Sheet

Assets	Liabilities
Refinancing to credit institutions Marginal Lending Facility Net foreign assets	Holdings on current **reserves** Deposit Facility **Currency** (ECU) Government Deposits

Total liabilities of the ECB are called the monetary base. The monetary base is equal to currency that is held by the public plus bank reserves. These reserves can be held as vault cash at the ESCB. Banks are required to keep a certain amount of reserves on hand so that banks can provide adequate liquidity in the event depositors withdraw money. To ensure transactions are adequately met, banks are required to keep a certain amount of reserves, hence required reserves. The reserves that are not required to be held are called excess reserves. Excess reserves can then be used as idle cash, however they have an opportunity cost because they could be used as short term loans.

1.14 Policy Tools

In order to pursue price stability in the medium term, the ECB uses policy tools from its "toolbox" to effectively as a monetary policy strategy to steer the economy to its ultimate policy goal of price stability, however indirectly. The ECB uses its policy tools to reach its operating target, then its intermediate target, and lastly its policy goal. The below listed is a general monetary strategy that the ECB pursues:

Policy Tools →	Operating Target →	Intermediate Target →	Policy Goals
Deposit Facility OMO Res. Req. Ratio	Reserve Aggregates, short term i-rates (Marginal Lending Facility)	Monetary Aggregates and short/long term i-rates	Price Stability 1. HICP $0 \leq \pi \leq 2$ 2. M3 growth 4.5%

1.15 Reserve Requirement Ratio

The required reserve ratio is an exogenous function of monetary policy that the ECB uses to change the money supply. The Governing Council sets reserve requirements and requires credit institutions to hold required reserves on accounts with their respective NCB. Changing the reserve requirement ratio impacts the money supply expansion process by changing the amount of required and excess reserves. For example, if the required reserve ratio increases, there will be an increase in required ratio and a decrease in excess reserves, which in turn contract the money supply expansion process. The reserve required ratio plays a role in the primary role of pursuing; control of the expansion of money, stabilizing interest rates, and creating or enlarging a structural liquidity shortage (Chap 7). Required reserves can be calculated by the following: $RR = r * D$; where r = reserve required ratio and D = Deposits. So let the reserve required ratio be 10% on a total of 100 euro dollars of checkable deposits. The required reserves would then equal: $RR = 0.10 * 100$; then $RR = 10$ euros as required reserves. The results are a total amount of 10 euros that are required reserves that must be at the bank.

The European Economic Community has established itself as a fractional reserve banking system for countries that have adopted the euro. As a result, the money supply expansion process is done every time new deposits are created, whether as a result of open market operations or new checkable deposits created. To understand how multiple deposit creation is computed:

$$\Delta D = RR\,(1\text{-}r) + RR\,(1\text{-}r)^2 + RR\,(1\text{-}r)^3 + \dots + RR\,(1\text{-}r)^n$$

So let there be an initial deposit of 100 € with a reserve requirement ratio of 10%:

$$\Delta D = 100(1\text{-}0.1) + 90(1\text{-}.10)^2 + 72.90\,(1\text{-}.10)^3 + \dots n$$

This also can be written as $100\,(1\text{-}.10) + 100\,(1\text{-}.10)^2 + 100(1\text{-}.10)^3 + 100(1\text{-}.10)^n$

As a result: $100 * \sum\limits_{n=0}^{\infty} = (1\text{-}.10)^n = 100 * \dfrac{1}{r} =$

As deposits grow over time in the money supply expansion process, so does holdings of currency and excess reserves. These are all influenced by the 4 players, as mentioned previously. As the money supply is expanded, so does currency holdings, known as the currency deposit ratio. This ratio can be algebraically defined as:

$c = C/D$, where c is currency and D is deposits

As deposits increase, excess reserves increase as well. These excess reserves are then used as liquidity providing, short term interest rates, therefore have an opportunity cost of the interest rate. The excess reserve ratio can be algebraically defined by the following:

e = ER/D; where ER = excess reserves

The reserve requirement, excess reserve, and currency to deposit ratios all affect the money supply process of the ECB into what's known as the money multiplier. The money multiplier is a magnified change of the velocity of money resulting from a change in bank reserves in either currency or deposits. The money multiplier is a parameter of the money supply and serves the following:

$$m = ((1 + c)/(r + e + c))$$

The money multiplier (m) gets magnified with new change in reserves and gets multiplied into the monetary base (MB). The MB is equal to currency plus total bank reserves and is defined by:

$$MB = C + BR, \text{ where } BR = ER + RR$$

$$M^S = ((1 + c)/(r + e + c)) * MB$$

The MB is the sum of currency and deposits; however can be broke down even further. The MB of the ECB is also the sum of the nonborrowed monetary base, MBn, and discount loans, DL. MBn is the open market operations buy/sell and the repurchase rate. The DL is the sum of the deposit facilities.

1.16 Marginal Lending and Deposit Facilities

To ensure liquidity among financial institutions, the ECB sets the reserve required ratio. Banks are required to report and verify their reserve base to the ECB each business day. Banks that find themselves with a shortage of required reserves may borrow an unlimited amount reserves from the marginal lending facility from their respective NCB before 6PM (ECB time). This is a uniform requirement throughout the euro area. Under Article 19.1 of the ECB Statute, reserve requirements cover "branches in the euro area of entities with no registered office in the euro area are…subject to the ESCB's minimum reserve requirement system" ("The Single Monetary Policy in Stage Three"). Branches that are located outside of the euro area of credit institutions are not subject to the ESCB's minimum reserve requirements.

The ECB requires all MFIs of Members States to report settlement accounts to ensure minimum reserves are being held for intraday liquidity purposes. These settlements reflect the reserves that an institution has on their end of day balances. Banks that fails to meet this requirement are subject to a "penalty rate" by not accounting for their end of day control measures, known as the marginal lending facility which is as an upper limit for overnight money that acts as a ceiling. This lending is the most expensive form of funding, therefore penalizing banks who fail to meet required reserves. The ECB takes recursive action by automatically requesting for funds on the marginal lending facility for banks that fail to meet reserve requirements from the member nation in which that institution is established ("The Single Monetary Policy in Stage Three"). Other penalties might be incurred if the ECB or relevant NCB "may at any time withdraw the

permission to hold minimum reserves indirectly" if financial institutions are found to be practicing unsound financial management ("Holdings of Minimum Reserves"). In order for a bank to use the marginal lending facility, they must have sound collateral.

Deposit Facilities is a standing facility that of the Eurosystem in which counterparties may use to make overnight deposits at the NCBs for a prespecified price. It is a short term overnight loan that is deposited by NCBs to the ECB, analogously as the federal funds rate that is implemented by the U.S. Federal Reserve. The deposit facility is specified and implemented as a monetary policy instrument by the Governing Council and is currently 1%, comparable to the federal funds rate.

1.17 Open Market Operations

Another monetary instrument that the ECB uses as a role of monetary policy is open market operations (OMO). The ESCB's OMO can be divided into four categories: Main refinance operations, Longer-term refinancing operations, Fine tuning, and Structural Operations. Before continuing, there 5 types of OMO transactions associated in the conduct of monetary policy:
1. Reverse Transactions: buy/sell assets under repurchase agreements or conducts credit operations against eligible assets provided as collateral.
2. Outright Transactions: Eurosystem buy/sell assets outright in the market.
2. Foreign Exchange Swaps: Forward looking transactions of euros against foreign currency.
3. Collection of Fixed Term Deposits: eligible counterparties that place remunerated fixed term deposits the NCB in that Member State in order to absorb liquidity fluctuations in the market.
4. Issuance of Debt Certificates: Debt certificates issued by the ECB to adjust financial liquidity shortages or enlargements.

Main refinancing operations is the most important OMO that are conducted in a decentralized manner by NCBs on the basis of standard tenders. They provide the bulk of liquidity in the banking system, through changes in the supply of reserves through reverse transactions. They are conducted on a weekly basis and have a maturity of two weeks. Since June 2000 till the present (October 2003), there are two types of main refinancing operations which include standard tenders that are in the form of fixed and variable rate tenders. The distinction is important, because there was severe overbidding putting pressure to increase key ECB interest rates. Initially, fixed rates offered an attraction for banks to overbid and pay a higher fee. By contrast, variable rate tenders caused a higher opportunity cost of overbidding and allowed banks to obtain more liquidity.

Longer-term refinancing is executed by NCBs to provide longer term liquidity to banks with a maturity of three months. They are executed through reverse transactions on the basis of standard tenders. The volume of longer-term refinancing operations will be predetermined by the Governing Council and specified in advance. The ECB has specified that the longer-term refinancing operations is not meant to total liquidity needs of the banking system, the rate is acting as a rate taker in order not to "blur the signal

arising from the Eurosystem's main refinancing operations", which accounts for the bulk liquidity of the banking system (Monetary Policy in the Euro Area, pp 67).

Fine tuning operations are a discretionary OMO that is implemented on an *ad hoc* basis, rather than coordinated. The main purpose is to smooth disturbances in interest rates of unexpected liquidity volatility in the money market. Fine tuning operations can implemented by the Governing Council and NCBs through reverse transactions, outright transactions, foreign exchange swaps, or fixed deposits. This promotes a high degree of flexibility to fine tune rapid fluctuations in the money market almost instantaneously.

Structural operations are aimed at liquidity position of the Eurosystem bank system. These operations can be conducted by reverse transactions, outright transactions, or issuance of debt certificates. These operations are executed using standard tenders.

1.18 Market Clearing Solution and the Government Budget Constraint

To incorporate GDP activity, government consumption must be applied in the simple market clearing model $Y = C + I + G$. So let G_t equal the government's demand for commodities at time period t. Assume real transfer payments denoted as V_t/P_t and tax transfer payments denoted as T_t/P_t are paid in one lump sum, making it more convenient not to consider substitution effects. So let government demand and transfer payments equal real aggregate tax revenues plus money creation (hence total real expenditures equal to total real revenues):

$$G_t + V_t/P_t = T_t/P_t + B_t$$

It's worth mentioning that fiscal policy authorities that have adopted the euro do not refer to direct money creation $[(m_t-m_{t-1})/P_t]$, as opposed to potential sources of revenue before the ECB became operational. For the euro area, the Maastricht Treaty under Article 106 states, "The ECB shall have the exclusive right to authorize and issue banknotes within the Community. The ECB and national central banks may issue such notes" which was enacted to prevent fiscal policy dominance and prevented activist policies (Maastricht). In other words, if there is an increase in government consumption, then this means there is a combination of changes that involve an increase in real taxes, T_t/P_t, and/or a decrease in real transfer payments, T_t/P_t.

When considering government activity, it is important to differentiate what types of services it provides, which include direct utility providing services denoted as α (alpha) and inputs to the production function denoted as β (beta). The services they provide are as follows:

α: bridges, highways, and school lunches
β: court and legal systems, gas, and national defense

Now incorporate government consumption in the commodity market clearing solution at period G1:

$$C^d(R_1, G_1, \Delta f(n), WE, SE) + I^d(R_1, \Delta f(n), WE, SE) + G_1 = Y^s(R_1, G_1, WE, SE)$$

Note for ease of reference that R denotes the interest rate, $\Delta f(n)$ denotes a change in the production function, and WE and SE denotes wealth and substitution effects that denote intertemporal substitutions.

1.19 Temporary Government Consumption

If there is a temporary increase in NCB government purchases, this creates a fiscal policy short run (since money is non-neutral in the long run) stimulus by increasing aggregate demand. How much of the increase of aggregate demand is determined by both the changes in investment and consumption demand. In a simple view, an increase in government consumption at G_1 will increase a proportionate one to one in aggregate demand if there is no change in both investment and consumption demand. However, the conventional wisdom argues that increases in G_1 empirically does lower both consumption demand and investment, so a more realistic view is for an increase in G_1 that reduces consumption and investment demand by $(1 - \alpha)$ units. This acts as a substitution of utility providing services by the government from private consumption. So according to the conventional wisdom, as G_1 increases and is temporary, this results in a decrease of consumption and investment demand to clear the commodity market and temporarily "crowds out" private consumption and investment for an increase in gov=ernment consumption
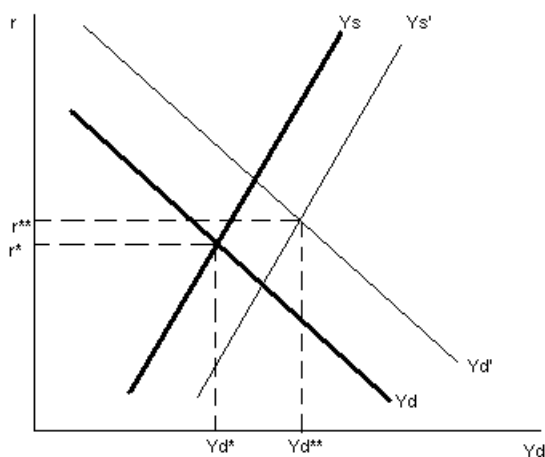
In a rational expectations model, the effects are quite different from the previous model. The conventional wisdom argues that as G_1 increases, aggregate demand rises by $(1- \alpha)$ units and crowds out investment demand. In a rational expectations model, investment demand at time period 1 depends on three parameters: schedule for marginal product, on the previous stock, and on the real interest rate which is given by the ECB is given homogeneously. As a result, there is not a crowding out of private investment by an increase in government consumption directly.

Secondly, a rational expectations model takes into account substitutions that are attributed to a temporary (or permanent for that matter) increase of government consumption. For example, consumers take into account the purchasing power of their real income. As G_1 increases temporarily, this creates an intertemporal substitution, making households take into account work effort, consumption demand, and leisure. As G_1 increases and there is an immediate tax increase (let there be no change in real transfer payments), this makes leisure more expensive and makes labor effort relatively cheaper, resulting in households supplying more labor effort, where the MPC is small (i.e. closer to 0) and the MPS is big (i.e. closer to 1).

For every increase in government consumption at G_1, there will be changes by β units. Because this is a temporary change in government consumption, at least one input of the production function will be fixed, whether capital or labor. So as aggregate demand increases by G_1, Y_s should increase by β units. Assume that β is positive, however less than one ($0< \beta <1$).

There are other things to consider when deriving temporary government consumption at a particular time period horizon, like how much of an increase in government consumption.   What if G_1 increased temporarily by one unit and firms and households received more in return for their substitutions? This would imply that an increase in temporary government consumption raises commodity supply, Y_s by β units, shifting output to the right towards Ys**. This creates disequilibrium with an excess supply in the market and puts upward pressure for commodity demand of Yd to shift to the right to Yd**. In summation, this would imply commodity demand increase by $(1 - \alpha)$ units and an increase in commodity supply by β units, therefore $(1 - \alpha + \beta)$. Algebraically, this equals $\alpha + \beta = 1$. Since households receive more than 1, substitutions for consumer consumption for direct utility α and output of inputs to production β exceeds additional taxes and is denoted as $\alpha + \beta > 1$.

If, however, G_1 increases and households receive less than 1 for their substitutions, households receive less for what they have given up (i.e. higher taxes). This implies that $(1 - \alpha + \beta)$ equals the inequality $\alpha + \beta < 1$. As government consumption expands more and more, the values of α and β decline.

This can also be expressed differently by the aggregate demand multiplier, which takes into account changes in income as a result of increased government spending, MPC, and changes in output. The simple model is as follows:

$$\Delta Y = \Delta G_1 + MPC\Delta G_2 + MPC\Delta G_3 + \ldots + MPC\Delta G_n = \frac{1}{1 - MPC} \cdot \Delta G1$$

If G1 increases and households receive more than 1 for their substitutions, then the results will be the following inequality:

$$\Delta Y = \frac{1}{1 - MPC} \cdot \Delta G1 > 1$$

If households receive less than 1 for their substitutions, then the following exists:

$$\Delta Y = \frac{1}{1 - MPC} \cdot \Delta G1 < 1$$

Consider a NCB like France conducting a fiscal policy stance in order to create an economic expansion. The MPC is currently estimated at 0.79 with current government expenditures at 273,812 million euros with a forecast of next quarter's (2004:Q1) government expenditures of 277,919 million euros. The change in government consumption is +5,740 million euros and is to create a fiscal expansion in the French economy by increasing temporary government consumption as followed:

	2003: Q4	2004: Q1 (Forecast)
A: Public debt and guarantees	38, 611	38, 690
B: Civil budget	195, 237	197, 502
C: Military budget	39, 964	41, 437
Total budget (A + B + C)	**273, 812**	**277, 919**

Source: "Projet de loi de Finances pour 2004"   *denoted in millions of euros

The following should imply:

$$\Delta Y = \frac{1}{0.81/100} \cdot *5{,}740 > 1$$

$$\Delta Y = 4.76 * 5{,}740 > 1$$

In summation, as government consumption is temporarily increased by 5,740 million euros next quarter (2004:Q1), Y_d will increase by 27,333 million euros in 2004:Q1 for France, because expected change in commodity demand will increase by 27,333, which is greater than the change of government consumption of 5,740.

1.20 Permanent change in government consumption

In the temporary case, an increase of temporary government consumption led to a higher commodity demand and supply, with Ys that exceeds Yd. But what happens when the increase in government consumption is perceived as permanent? Now forward looking, non-myopic households take into account that there will be a permanent increase of the value of present government consumption that is now and forever more. In the permanent case of changes in government consumption, for every increase in government consumption leads to increases of both commodity supplied and demanded by around an equi-proportionate one to one ratio. Consider there is no change in relative scarcity now and forever more. Consumption demand now falls by (1-α) units as β units increase. The conventional wisdom argues that investment demand is crowded out with an increase in permanent government consumption. Conversely, a Rational Expectations view implies that consumers are forward looking and take into account there is no change in the household's spread of permanent income. MPC will then closer to 1 and MPS will be closer to zero.
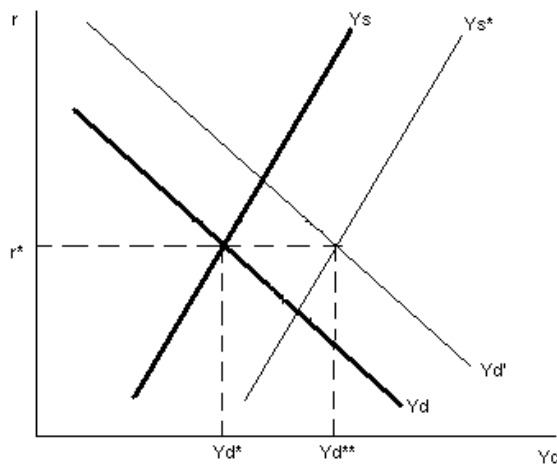
If the government is perceived to increase consumption permanently and increases taxes of $1, then this would have effects on the household disposable income by $(1 - \alpha - \beta)$. In the case of a temporary increase of income, an increase of government consumption increases leads to a fall in a household disposable income. In contrast, a permanent increase of government consumption and taxes causes a decline in disposable income, however since it is a permanent change, the MPC will be close to one whereas the MPS will be close to zero.

2.1 Stability and Growth Pact

The Stability Growth Pact (SGP) was adopted at the Amsterdam European Council in 1997 in an effort to ensure precautionary safeguards of price stability among Member States. The SGP's rational was to ensure that the EU Member States would promote sound fiscal policy in order to "smooth" monetary policy that the ECB implemented. Its purpose is to safeguard price stability by enforcing sound fiscal policy rules by Member State governments and prevent fiscal policy dominance.

Currently, the SGP is the center stage of attention among the European Community, in that France and Germany are in direct violation of Article 104 of the Pact. Germany has a deficit to GDP ratio of - 3.7%, while France has a -3.6% ratio ("Rising Deficits in Europe"). This is an explicit policy that is angled toward the conventional theory of budget deficit allocation, rather than a forward looking Ricardian view. The SGP is easily understandable by the public and is being used as a basis of gauging central bank and fiscal credibility. For example, the *Wall Street Journal* had an article that reflects a majority consensus among the public, media, and politicians, by stating, "The ECB warned that unless France and Germany limit their surging budget deficits … the credibility of the euro area could be damaged" ("Rising Deficits in Europe").

The SGP is sheer result of the much antipathy of the 1960's and 1970's monetary policy thrust towards activist policies that explicitly used the augmented Phillips Curve, advocating there is a tradeoff of economic expansion for inflation. This model has been long since been rejected as facilitating economic growth only to create high double digit interest rates and high levels of inflation. Even though the SGP was intended to prevent activist policies, some economists have argued that the Pact can actually promote them. Further analysis directs our attention that SGP can be problematic and even in some cases can be used to provide the opposite direction it was intended for. There are many costs generated by the SGP that could dampen or even compromise price stability. However, an analytical account needs to be derived, as many economists have shown, in that the very fundamentals of the SGP by looking at their advantages and disadvantages and any discrepancy that it faces as followed:

The advantages include:
1. Political commitment
2. Preventative elements
3. Dissuasive deviant behavior
4. Debt transparency exposure
5. Measure of credibility
6. Prevents spillover effects

The disadvantages include:

1. No tradeoff of credibility for flexibility
2. Too much restrictive deficit
3. SGP fails to account for structural deficits
4. Creates an incentive for NCBs to inflate the economy if deficits are below target during the political business cycle
5. Creates procyclical policy
6. SGP provides an incentive to abruptly decrease output to "deflect" from sanctions

7. Creates an incentive to inflate the economy during election years as long as total deficits are below 3%.

2.2 Advantages of the SGP

Political commitments require all members of the SGP to acknowledge a sound fiscal disciple by restricting government deficits to a reference value of 3%.   Resolution of the European Council on the SGP stated NCBs must "commit themselves to respect the medium-term budgetary objective of positions close to balance or in surplus…" (Resolution of the). This resolution was established in the Treaty of Amsterdam to prevent activist policies of NCB in a time of which there is a time of stagnate economic growth in order to gain public opinion/approval. Fiscal policies could then potentially dampen economic growth for other Member States. Increased government spending leads to higher deficits, resulting in upward pressure in relative prices and the interest rate.

Preventative elements are used as multilateral budget surveillance in accordance with Council Regulation 1466/97 ("Council Regulation"), requiring all Member States to submit budget positions. There are a total of four reports that are required to be submitted: a medium term objective for budget position, economic forecasts, description of policy measures, and an analysis of how changes in economic forecasts changes debt positions. This creates greater transparency and ensures that Member States are complying with the reference value deficit of 3%.

Dissuasive elements are corrective actions in the event that a Member State has breached the reference value of 3% of GDP deficits. Sanctions are imposed if the limit has been breached and ignored when a country is not in a recession, which is defined as a reduction in GDP by 0.75%. If a Member State is not in a recession and has breached the reference value of GDP deficit, then EU financial authorities might impose fines between 0.2% to a maximum of 0.5% of the GDP.

Lastly, Michael Carlberg explores fiscal policy within EU countries that have adopted the euro as currency and the negative macroeconomic impacts that involve spillover effects on union currency itself (European Monetary, pp 39-42). According to the 2000, OECD measures share of world GDP of the U.S. as the largest economy at 22%, following the euro area which represents 16%. The economy is relatively a small open economy which represent – countries, like Germany and France. A major drawback to the EMU is all business cycles are not synchronized together proportionately (i.e. they don't necessarily happen the same time, but in different frequencies). A country that experiences shocks to their economy could potentially influence other countries as well, hence upward pressure on the increase in the interest rate and potential inflation. Fiscal policy plays an important role in the EMU, because it is a policy instrument at the national level. The following is an example of a policy stance of a French increase in government purchases and the effects on German income. Assume that the interest rate, r^* is constant; $r^* = r$.

$Y_1 = C_1(Y_1) + I_1(r) + G_1 + H_1(e, Y_1, Y_2)$; where Y_1 represents French income

$Y_2 = C_2(Y_2) + I_2(r) + G_2 + H_1(e, Y_1, Y_2)$; where Y_2 represents German income

$$M = L_1(r, Y_1) + L_2(r, Y_2);\ \text{M represents money supply and L the money multiplier}$$

In theory, if a NCB, like France, pursues an activist policy to stimulate growth, aggregate demand will increase with increased levels of G_1 spending. This results in the French consuming more goods and services from France. This is represented by the following:

$$dY_1 = cdY_1 + dG_1 + hde - qdY_1 + mdY_2$$

$$dY_2 = cdY_2 + hde\ mdY_1 - qdY_2$$

Then subtract dY_1 from dY_2 to achieve dG_1. For further analysis, substitute dG_1 into the fiscal policy multiplier, which equals:

$$\frac{dY_1}{dG_1} = \frac{1}{2(1 - c + q + m)}\ .$$

$$\frac{dY_2}{dG_1} = \frac{1}{2(1 - c + q + m)}\ .$$

In the above listed expression, c equals the marginal propensity to consume; q equals the marginal import rate of country 1 (France) relative to country 2 (Germany); m equals the marginal import rate of country 1 only.

There are some potential changes to income and capital resource flows as a result of fiscal policy in a "one currency, one euro" model, depending on substitutions. For example, a fiscal policy expansion in France will increase aggregate demand at G1, thus raising French income. If, however, fiscal policy has provided a stance that has changed relative prices in France only, this can have real economic impacts in the short run and the Economic Community that has established the euro as currency. Say, for example, what if France increases G1 and makes changes in relative prices in a manner that makes French commodities relatively more expensive than, say German commodities, remembering that both have adopted the euro as their national currency. The implications would be for Germans not to buy French goods, because they are sold at a higher price. This creates an incentive to buy from other non-union countries which depresses the appreciation of the euro, creating a negative externality that has a spillover effect to other Member States that have adopted the euro.

An illustration of this theory is provided with the following listed numerical values: c = 0.72, the marginal import rate of France relative to Germany is m = 0.16, and q = 0.24 for country 1. The results for a fiscal expansion in French government purchases will increase the money supply of 100 (euros) is 0.735, which is not a lot. German income must then fall as French income must rise, so for an increase in French income of 100 (euros) in France, there will be a decline of 74 (euros) in German income, which is a lot. Holding other variables fixed, the outcome is no change in income for the EMU, yet there is an increase in French income with a decrease in German income and $dY_1 + dY_2 = 0$. This does not mean there will not be an injection or retraction of currency from the EMU.

2.3 Disadvantages of the SGP

First and foremost, the biggest costs for the SGP come in the form of lost flexibility for fiscal authorities among NCBs, because of quantitative restrictions imposed on them now have their hands tied by not being able to use fiscal policy to fight shocks with the use of built-in automatic stabilizers (Fiscal Aspects, pg 165). The SGP could provide a dampening effect of a crucial fiscal policy interaction that could be used to intervene and smooth out shocks. For example, it is more optimal for a government that exhibits little cyclical variability to use a tax "smoothing" policy that allow federal tax rates to decline in recessions and increase during expansions. This policy then behaves as countercyclical policy that responds mechanistically to business cycle fluctuations, creating an intertemporal arrangement of labor effort ("Federal Deficit Policy").

According to Artis and Winkler (1996), the SGP could promote a "perverse" procyclical measure in an effort to avoid hitting the quantitative target of 3%, yet the NCB might be experiencing short run shocks. Given that the SGP deficit limit is asymmetric with respect to the short run macroeconomic management, the SGP could result in compromising price stability. In other words, doing the opposite in which it set out to do. Since fiscal authorities have their hands tied, the flexibility lost to retain credibility can become a devastating monetary-fiscal policy mix (Hughes and Houggard, pg 176-7).

For example, if a NCB experiences a short run demand shock (since supply shocks are a little trickier), which hinders the economy. The use of fiscal policy coordination could, at least potentially, exacerbate these shocks, hence stabilize the economy. If a NCB was in a struggling economy and experienced some transitory shock to the economy, the SGP could dampen the role of fiscal policy intervention if they were to exceed the 3% deficit target, creating an even more unbalanced economy. The absence of fiscal policy intervention then tends to further magnify the burdens of society, not to mention monetary policy.

The SGP does not account to distinguish between structural or cyclical deficits by issuing a 3% deficit ceiling. Total deficits (TD) are the sum of cyclical (CD) and structural deficits (SD) and are expressed as the following: $TD = CD + SD$. According to Hallett and McAdam (1997), the SGP creates a discrepancy in that the Pact has failed to distinguish between CD and SD. The CD is as given and as a result of the business cycle, however SD are as a result of fiscal policy intervention as a result of lost revenues and the prevailing unemployment rate, and is given as followed: $SD = TD - CD$. Countries which are in a recessionary environment and have cyclical deficits of 3% are restricted to short run fiscal policy maneuvers by increasing government consumption, thus raising structural deficits just when the economy needs it most. Fiscal authorities might have a greater incentive then not to intervene in order to prevent sanctions imposed on them by the Council of Ministry (Hughes and Houggard, pp 240).

The sixth disadvantage, according to Winkler and Artis (1998) is NCBs might have an incentive to deflect from having "excessive deficits" by referring fiscal authorities to actually contract the economy in an effort of preventing imposed sanction and that fiscal authorities will not be embarrassed, especially if total deficits are close to

2%. Again, as a rule, if a NCB has a decline in output by 2% or greater and has deficits exceeding 3%, the NCB is automatically wavered from all penalties. If, however, a NCB has an excessive deficit and the economy has contracted between 0.25 to 0.75%, sanctions might be imposed, however at the discretion among the Council of Ministers. This creates an implicit incentive for fiscal authorities to follow a procyclical policy and to create an economic contraction so that a NCB's GDP actually falls even further so that sanctions could be wavered and monetary and fiscal authorities are not embarrassed internationally as being incompetent (Hughes and Houggard, pp 157-79).

The seventh disadvantage, I believe that fiscal authorities seeking government reelections might be induced to create larger, less optimal fiscal expansions, especially if at time of uncertainty and political momentum is gauged on certain negative macroeconomic indicators, such as unemployment and stagnate growing economic output. These incentives can potentially create an incentive to fight indicators like high unemployment by way of substituting a tax cut for a government bond, hence government dissaving. In theory, this incentive holds stronger ground as long as deficits do not breach the SGP deficit ceiling of 3%. For example, if a country experiences an immediate economic contraction during an election year and the deficit to GDP ratio is 1.8%, this creates a "safety margin" of 1.2% to try and pursue a less optimal fiscal policy that will increase output, not to mention lower unemployment in the short run by providing tax induced substitution effects to provide more labor effort and less leisure. The results, in effect, advocate a further analysis on structural deficits directly, rather than targeting total deficits.

2.3 Ricardian Equivalence Theorem

Empirical evidence (see Charles Plosser, 1987) on budget deficits for the U.S. since late 1982 has given conflicting evidence in that the conventional view on budget deficits in response to business cycle fluctuation, government expenditures, and inflation. This has led economists to support the paradigm of the Ricardian Equivalence Theorem, notably by Robert J. Barro, however named after British economist David Ricardo. The Ricardian Equivalence rests on four pillars; altruism, taxes are lump sum, infinite lives, and perfect capital markets ("The Ricardian Approach"). The Ricardian Theorem argues that as budget deficits increase, there is no upward pressure on interest rates, no change in commodity demand, and no change in national savings as a result of forward, infinitely lived consumers that behave rationally and no real change in present value of tax liabilities. Conversely, the conventional wisdom argues that as deficits expand, upward pressure is then placed on interest rates, higher consumption demand as a result of a change in present taxes, and lower national savings.

2.4 Temporary Tax Cut

Suppose there was a 1 € tax cut that replaces a current taxes with a deficit at B_t, where we assume $B_t - B_{t-1} = 0$. According to the conventional wisdom, a tax cut of 1 € implies that there will be an increase subsequently in the next period B_{t+1} by 1 €. As a result, Cd would increase at B_t because at B_{t+1} there will be a higher interest rate, hence

there will be a change in the present value of taxes. Converse to the conventional argument, if fiscal policy authorities substitute a current tax cut for deficits and behave rationally and are forward looking consumers that plan effectively for future tax liabilities, change in the present value of taxes are equal to zero. As a result, there is no change in aggregate consumption demand ("The Ricardian Approach"). In perspective, a deficit financed tax cut in the Ricardian view results in an increase in private savings and no change in consumption demand, hence no change in desired national savings or the interest rate.

Unlike the conventional view, there is no increase in the interest rate due to government deficits. Taxes fall by 1 € during period 1, however rises by interest rate (R) for each subsequent period until the deficit reaches zero. The net effect is that there will be no real change in the present value of tax liabilities for infinitely lived households and is expressed by the following (*Macroeconomics*, pp 523-4):

$$(1/P)*[-1 + R*[1/(1+R) + 1/(1+R)2 + …]$$

$$= (1/P)*\{-1 + [R/(1+R)]*[(1+R)/R]\} = 0$$

Suppose there is a tax cut by 1 € at time period 1 where the government substitutes taxes for government bonds at $B^g_t = 1$. This increases disposable income by 1 € currently, however it will have to be paid back in subsequent periods with (1+R) €. Are bonds then net wealth? No, The principal of 1€ is paid back plus (1+r) € which equals:

$$\underset{n \to \infty}{Lim} = -1 + R/(1+R) + R/(1+R)_2 + … + R/(1+R)_n = 0$$

If households wanted to optimize their budget constraint, then they can use their immediate increase of an extra 1 € increase in disposable income from the tax cut into buying a 1 € bond which provides a hedge against future tax liabilities plus R that the deficit accumulates. This implies that:

$$B^g_t = B^g_{t+1} = B^g_{t+2} = … = B^g_{t+n} = 1.$$

This means that bonds are not aggregate wealth and are nothing more than a time shelling game ("Are Government Bonds").

As a result, there are no aggregate wealth effects and no changes in either labor effort or consumption demand for infinitely lived households. The household maximization for infinite, non altruistic households would not then change increase their consumption demand on commodities, since the extra disposable income was transferred into bonds. This implies the following lifetime consumer budget constraint:

$$C1 + C2/(1+r) = Y1 + Y2/(1+r) – T1 – T2/(1+r) = no \, \Delta Y_d$$

3.1 Conclusions

In this paper, I consider the performance of the ECB since Stage III till the present has displayed itself as a credible central bank at meeting its policy goals of price stability

in the medium term. There are discrepancies, however, insofar as the ECB's choice of intermediate targets of monetary aggregate M3, which has failed to meet time and time again, as a result of potentially compromising price stability. Many Governing Council Members have stressed less emphasis on targeting money stock aggregates and more towards targeting inflation measurement by the HICP, which the ECB has been more inclined to meet. Secondly, the ECB's failure to give full disclosure of its General Council Meetings has been long argued in terms of illuminating transparency and (*ex post*) accountability among the public, firms, media, and even politicians who has control on budget allocations.

Alternatively, has the SGP been successful in preventing fiscal policy dominance, so that it does not hinder the ECB's monetary policy strategy? Can the SGP prevent activist policy that prevents spillover effects? The SGP has shown an effective strategy on NCB to keep deficits at an arbitrary target of 3%, however with many costs such as flexibility, rules rather than discretionary, and provides fiscal authorities an incentives of pursuing activist policies during the political business cycle, contracting the output even further in order to deflect from international criticism as being incompetent, and most importantly, the SGP facilitates procyclical policy.

The "core" reasoning stands behind the conventional wisdom of budget deficits, in deficits that breach a 3% target during times of contraction hinders the entire European Economic Community with higher interest rates, a decrease in investment demand, and further burdens to society. The authors of the SGP have not taken into account empirical evidence that deficits do not put pressure on the interest rate as a result of no change in current tax (see *Macroeconomics*, pp 538-9). It is concrete policy that prevents activist policies, however is to facilitate them.

What the SGP does not take into account is that the Pact is an explicit underscore to price stability that models procyclical policy that is used as an alternative 'instrument' that NCBs are forced with to stabilize and smooth out transitory shocks that can be detrimental in the short run. Increases in government deficit during times of contractions can offer more flexibility at the NCB and can be paid off in future periods, which do not change present value of taxes and does not increase the interest rate, ceteris paribus.

As a procyclical policy, the SGP enforces the idea that in order to maintain a balanced budget, a government must increase an immediate tax increase during contractions and decreasing tax rates during times of expansion. As Robert Barro has shown, budgetary allocations are more optimal if instead of raising taxes during recessions, the government should allow deficits to exhibit tax induced substitution effects. Rather than contracting the economy even more in a contractionary environment, it would be better for governments to borrow on future tax revenues to stimulate the economy. Alternatively, governments could repay back to depress deficits to zero in the long run by paying them back plus $(1 + R)$. Fiscal policy, with regards to the business cycle, would become more exogenous without a SGP that imposes rules.

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