A Discussion of the Monetary Condition Index

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Abstract

The monetary conditions index (MCI) was developed in the early 1990s with the aim of capturing two of the important monetary transmission channels by combining both interest rates and exchange rates. This article examines the development of the MCI and explores the difficulties with implementing it as well as many of the problems associated with interpreting its results. These problems also need to be borne in mind with the recent interest in developing measures of how financial variables affect the economy through the development of financial condition indicators.

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1. Introduction

Monetary policy affects economic activity and inflation through a series of channels, which are collectively known as the transmission mechanism. Changes in the monetary authority's policy rate are generally transmitted into changes in the market and retail interest rates, which can affect households' consumption and saving decisions, firms' investment and borrowing behaviour and finally output and inflation. In a flexible exchange rate economy, changes in the policy rate also affect the value of the domestic currency vis-à-vis other currencies, influencing the competitiveness of domestic exports and imports, and ultimately affecting net trade and hence aggregate demand. In addition to this, exchange rates can also have a direct effect on consumer price inflation, via domestically consumed imported goods.

The Monetary Conditions Index (MCI) was developed in the early 1990s with the aim of providing information on the stance of monetary policy taking into account both the interest rate and the exchange rate channels. It is a weighted average of the short-term interest rate and exchange rate. Initially it was used as an operational target by the Bank of Canada and Reserve Bank of New Zealand, but subsequently its role diminished due to problems in its construction and interpretation, and it is now used less frequently and only as one indicator amongst many in monetary policy analysis. With this in mind, it is not the aim of this paper to contribute to the current conjunctural monetary analysis, but rather to discuss the origins of the MCI and to highlight some limitations and issues relating to its implementation and use.

With the increasing financial complexity of the modern economy, growing attention is paid to how other financial variables including the price of various asset classes affect the economy. Moreover, policy makers have placed an increased emphasis on financial stability considerations given that changes in financial variables affect wealth and balance sheet considerations of various sectors in the economy. This has led to an interest in the development of Financial Conditions Indices (FCI), which seek to provide a simple measure of how financial market variables impact on the economy above and beyond the standard interest rate and exchange rate channels. However, in many senses the FCI can be seen as an extension of the earlier MCI. Moreover, many of the methodological difficulties associated with the construction of the MCI, as well as many of the caveats and criticisms, are also germane to FCIs.

The article proceeds as follows: Section 2 describes the MCI and its construction in more detail, and identifies possible uses for the index. Section 3 outlines the various important issues related to the index regarding both its methodology and its interpretation, while section 4 looks at the MCI for some major economies, and briefly discusses its movements over the past decade. This article also includes two boxes: the first provides greater technical information on the choice of weights used to estimate unobservable elements of the MCI, while the second box is based on a case study of the Canadian and New Zealand MCI.

2. A description of the MCI

The MCI, which was first developed by the Bank of Canada in the early 1990s, is calculated based on a weighted average of changes in short-term interest rates and exchange rates relative to some reference period. It aims to provide information on the economy and inflation for monetary policy analysis. A change in the index indicates how 'tight' or 'loose' monetary conditions in the economy are, relative to a certain reference level.

The most obvious benefits of the MCI are that it is straightforward, easy to understand, and, in the past, was seen as a better indicator than just focusing on interest rates, given the role of the exchange rate in the transmission mechanism. Even though it was used by central banks, international organisations, as well as financial corporations in different ways over the years, it has various shortcomings. It is difficult to operationalise given that it combines a monetary policy tool (interest rate) and a macroeconomic outcome (the exchange rate) and a lot of judgement is required for its calculation.

2.1 Definition

The basic formula for the MCI is as follows:

$$MCI = -[\theta_1(R_t - R^*) + \theta_2 ((e_t - e^*) \times 100)] \quad \textit{(Equation 1)}$$

- R_t represents the level of the short term interest rate, and e_t is the log of the effective exchange rate at a particular point in time t[2]. If e increases it implies that the domestic currency is appreciating. Either real or nominal rates for each of these variables can be used. Short-term money market rates are used, as they are closely aligned to the policy rate, and the decisions by monetary authorities transmit quickly into these rates.

- The asterisk denotes the reference level of each of the respective variables. In theory, the reference or base levels for the variables should reflect ''neutral'' economic conditions, but in practice this is difficult to operationalise, hence a simple average over a period of time is generally used[3]. Rather than focusing on the absolute levels of the variables, changes in the variables with respect to this base level are used. If the $(R_t - R^*)$ or respectively the $(e_t - e^*)$ component is positive it means that the current interest rate, or respectively the exchange rate, is higher than that observed on average during the reference period.

- The weights applied to interest and exchange rates, θ_1 and θ_2 respectively, typically add up to unity. The ratio θ_1/θ_2 reflects the relative impact of the interest rate and exchange rate on the economy as measured by either aggregate demand or prices, although the former method appears to be much more prevalent in the literature[4]. Therefore, if there is a rise of θ_1 percentage points in the interest rate, it will have the same effect on the policy goal as a θ_2 percent appreciation of the domestic currency, so that a larger ratio will mean a weaker overall affect of the exchange rate in the MCI. There are a number of possible methods to derive these weights, which are outlined in Box 1.

- Finally, a negative sign is usually attached to the overall computation of the index so that, when there is a decline (increase) in the index, as defined by Equation 1 above, it indicates that monetary conditions have tightened (loosened)[5].

2.2 Possible uses

In the implementation of policy, monetary authorities focus on a number of variables, from the ultimate target (frequently inflation) at one end of the spectrum to the policy instruments (such as the short-term interest rate) at the other. Due to long lags and the indirect connections between the target and the instruments, monetary authorities resort to operational targets[6], information variables and indicators that link the two. These intermediate variables or targets are closely linked to the ultimate target and are influenced by changes in the policy instrument (Freedman, 1994). The MCI falls within this group of intermediate measures, and can be used as an indicator or operational target in the conduct of monetary policy.

When the Bank of Canada developed the MCI in the early 1990s, it was used as an **operational target** in the design of monetary policy, and was then subsequently used in the same way by the Reserve Bank of New

[2] The short-term rate usually employed is the 3-month interbank rate, and the effective exchange rate is a weighted average of bilateral exchange rates against major trading partners. The difference in the log of the exchange rate is mulitplied by 100 in order to express it as a percentage.

[3] Ideally, optimal or equilibrium levels of the interest rate and exchange rate could be used, estimated from a Taylor type rule or an equilibrium exchange rate model, but in practice these are exceptionally difficult to accurately estimate.

[4] Some commentators criticised the practice of deriving the weights from an aggregate demand function when the overall target was inflation, as was the case in Canada and New Zealand. However, one of the reasons for focusing on aggregate demand is, ''because it is the output gap, along with expected inflation, that is the principal driving force behind increases and decreases in the inflationary pressures and it is changes in aggregate demand that are a key determinant of changes in the output gap'' (Freedman, 1994).

[5] The rationale for the negative sign is that tighter monetary conditions generally bear down on activity levels and looser policy generally does the reverse.

[6] The operational target of monetary policy is an economic variable, which the central bank aims to control by use of its monetary policy instruments. It is the variable the level of which the monetary policy decision-making committee of the central bank actually decides upon in each of its meetings (Bindseil, 2004).

Box 1: Calculating the MCI weights

The MCI, as outlined in Equation 1, contains certain unobservable elements that need to be estimated, namely the reference levels for the interest and exchange rates, and the weights attached to deviations between these variables and their respective reference levels. Overall, the size of θ_1/θ_2 should capture the effect of percentage point changes in the interest rate relative to a percentage change in the exchange rate and its accuracy is conditional on the particular model used for estimation. This box reviews the different methods used in the literature to estimate the weights.

Batini and Turnball (2002) posit that there are three main methods for estimating the MCIs' weights:

Single Equation based MCIs

One of the most common ways of deriving the weights based on the above rationale involves estimating an aggregate demand function, similar to the following:

$$\Delta y_t = \alpha \Delta R_t + \beta \Delta e_t + x + error$$

Where Δ is the first difference operator which captures the change in the variable over time[1], y is Gross Domestic Product (GDP), R is the interest rate and e is the exchange rate. The subscript t refers to the current or latest time period. Overall, this function seeks to discover the effect of changes in interest rates, exchange rates and other economic variables, represented by x in the equation above (i.e. current and lagged values for GDP of main trading partners), on GDP. From this equation, α and β, the partial derivatives of the interest and exchange rates respectively, can act as the weights θ_1 and θ_2, so that the ratio of the coefficients in equation 1, θ_1/θ_2, equals the ratio α/β.

Multiple Equation based MCIs

There are also more elaborate multiple equation-based methods. These methods involve estimating and simulating structural macro-econometric models in which the weights are then obtained from a system of equations rather than just one. The weights can also very often be estimated using vector autoregressive models (VARs), with time series of GDP, exchange rates and interest rates. Subsequently, impulse response functions (IRFs) are derived. The IRFs measure the response of GDP to individual shocks in both the interest rate and the exchange rate. The weights θ_1 and θ_2 are then based on a cumulative average responsiveness of GDP to shocks in the interest and exchange rate respectively over a certain number of quarters. A critical element in the use of this approach is the correct identification of shocks to the relevant variables. Many banks and international organisations use the weights estimated from existing structural macroeconomic models, for example the OECD bases its weights on results from their Interlink Model. MCIs based on large macro-econometric models, especially those that contain a monetary policy reaction function, are more instructive as they take account of more features of the economy.

Trade share based MCI

This final method is simpler to calculate. The exchange rate weight is based on the long run exports-to-GDP ratio and the interest rate weight is simply one minus this ratio. The rationale is that this net trade component captures the effect of the exchange rate on GDP relative to interest rates. However, it is used less frequently given the simplicity in relation to the estimation of the weights and, consequently, the lack of detail about the effects of the relevant variables on the economy.

Overall, the multiple equation based model is generally deemed to be optimal, as it takes account of the cumulative lagged impact of the different variables. The dynamics of the underlying model are very important; a model that takes account of the different lags at which an economy responds to changes in interest rates and exchanges rates would perhaps deliver a more accurate index. If a model is too simple, or fails to take into account key characteristics of behaviour, the measurement of the weights can be flawed, meaning that the MCI itself is built on erroneous foundations.

[1]The operator is defined as $\Delta y_t = y_t - y_{t-1}$, which is the change in GDP from the previous period.

Zealand between 1997 and 1999 (see Box 2). The rationale for adopting this policy was that it may be difficult to predict the response of the foreign exchange market to a change in the policy rate (Gerlach and Smets, 2000). The theory of uncovered interest rate parity[7] suggests that interest rates and exchange rates are related in a systematic way, although empirically this relationship does not always hold. Hence, there is still no completely clear understanding of the interaction between interest rates and exchange rates.

The method used in the case of the operational target, which was particular to these two countries, involved having an inflation target[8] and deriving a solution for future interest rates and exchange rates consistent with the target after having taken into account domestic and foreign economic conditions. Using these projections the bank was able to derive the so-called 'desired' MCI level, which could represent a range of values rather than point estimates. The forward-looking focus of this approach took into account the lags between the monetary policy stance or changes in it and the effect on the rate of inflation[9]. If the actual level of the MCI deviated from the desired path, the Bank would use the tools at its disposal (for example, the overnight rate) to adjust the index accordingly.

It is important to note that using the MCI as an operational target does not imply an automatic reaction to all exchange rate changes, since the target level of the MCI varies in response to shocks that affect the exchange rate. In the case of an aggregate demand shock, the desired level of the MCI will change, whereas if there is a credibility shock, the target MCI level should remain unchanged ceteris paribus. As Charles Freedman, the deputy Governor of the Bank of Canada at the time put it,

> *"A lot of judgement goes into it, and there is a lot of cross-checking against important information variables such as the rate of growth of monetary aggregates[10]".*

[7] The theory of uncovered interest rate parity states that "the exchange rate against a foreign currency deviates from its expected value at some future time by the size of the interest rate differential (over the appropriate horizon) with that country" (Stevens, 1998).

[8] Canada had an inflation range of 1-3 per cent and New Zealand had a target of 0-3 per cent.

[9] For Canada, Freedman (1995) estimated that monetary actions would influence the rate of inflation in about 6 to 8 quarters ahead.

[10] Excerpt from remarks made by Deputy Governor Freedman to the Conference on International Developments and Economic Outlook for Canada, 15 June 1995.

The use of the MCI as an operational target diminished over time, due to pitfalls that emerged when the index was used in this capacity. In particular there was great uncertainty regarding the source of exchange rate movements. A more detailed look at these problems in Canada and New Zealand, are discussed in Box 2.

With the MCI's relevance as an operational target declining, it has increasingly been used as an **indicator** in monetary policy analysis. In this capacity, monetary policy tools are no longer used to adjust the level of the index to a desired path, but rather it merely helps to inform policy makers of the current stance of monetary conditions, and whether they are tighter or looser relative to other periods.

3. An evaluation of the MCI

The MCI presents some problems both at the level of construction and in terms of its conceptual and empirical foundations, which are outlined in this section.

3.1 Methodological Issues in constructing a MCI

In constructing a MCI, an initial technical issue is to determine the appropriate ***weights***. Since the weights of the components are not directly observable, but are based on econometric estimates, they are highly sensitive to the model used (see Box 1) — i.e. the MCI ratio can suffer from *model uncertainty*. The main pitfalls involved in deriving the weights therefore, vary between the models used and are consequently *model dependent*. The principal problems include capturing the correct *dynamics* of the relationship, as interest rates and exchange rates can affect the economy at different speeds, and *parameter constancy,* which requires that the coefficients from the models used to calculate the weights, must not change depending on the time period used[11]. If these problems are not adequately dealt with, the weights that are derived risk being erroneous and may provide an inaccurate picture of monetary conditions (Eika et al. (1996) and Batini and Turnball (2002)).

[11] For a further and more detailed discussion of the econometric problems involved in calculating the MCI weights please refer to Eika et al. (1996) and Batini and Turnbull (2002).

Box 2: MCIs as an operational target — problems in practice

A number of difficulties and challenges emerged during the period in which the MCI was used as an operational target by both the Bank of Canada (BoC) and the Reserve Bank of New Zealand in the 1990s. Some examples of these problems are highlighted in this box.

While the MCI appeared to be attractive as an operational target for the BoC, it became evident that there were a number of shortcomings. Firstly, there was a tendency on the part of some observers to treat the MCI as a precise short-term target for policy, while the Bank indicated that it should not be treated as a narrow, precise measure. Secondly, the markets started to treat all exchange rate movements as portfolio readjustments on the part of investors (portfolio shocks) and, therefore, came to expect an offsetting interest rate adjustment every time there was a movement in the exchange rate, whether or not such an adjustment was appropriate. In addition, the central bank itself had to make a judgement on the source and likely persistence of the shock to the exchange rate, in order to decide on the appropriate response. Indeed, this caused problems in 1998, when the rapid depreciation of the Canadian Dollar produced accusations of a myopic central bank (Robson, 1998), whereas the BoC argued that the depreciation signalled looser than desired monetary conditions that warranted sharp increases in the policy interest rate.

Given the difficulties mentioned, less emphasis was placed on the role of the MCI as a measure of monetary conditions in the late 1990s and the early part of the current decade. Subsequently, the MCI was discontinued from being published by the BoC (2006), and has not been used as an input into monetary policy decisions.

Problems also emerged in New Zealand over the period when the Reserve Bank of New Zealand employed the MCI as an operational target (mid-1997-March 1999). In particular, interest rates were increased as an automatic response to a depreciation of the New Zealand Dollar (NZ$), with little evidence that those interest rate increases were warranted. As a result, interest rates were increased at a time when a serious drought caused severe water shortages in New Zealand, the Asian crisis evolved (1997/1998) and as output growth in the country turned negative. Given the circumstances, this may not have been the most appropriate action. Following the difficulties encountered, the Reserve Bank of New Zealand subsequently acknowledged that they ''were slow to recognise the joint impact of the Asian crisis and the beginning of an extended drought through 1997 and early 1998''. They subsequently discontinued using the MCI in this capacity.

Related to this, even if the model for deriving the weights is correctly specified and manages to accurately capture the effects of the interest rate and the exchange rate on the economy, over a certain period of time, there is always the possibility that the monetary transmission mechanism itself (the effect of the interest rate and the exchange rate on output) can change over time for a variety of reasons. Therefore it is vital to monitor this system and ideally to ensure that any changes to how monetary impulses are transmitted to inflation are recognised in the MCI. In practice this may be difficult to achieve.

A further technical issue is whether MCIs should be calculated in terms of ***real or nominal variables.*** Theoretically, it would seem preferable to express the MCI on the basis of real variables as the real MCI takes account of inflation movements. It is also generally believed that rational agents consider the real rather than nominal rates in their consumption and investment decisions. However, there is evidence that individuals can suffer from money illusion whereby they consider the nominal rather than the real variables in their decision making (Akerloff and Shiller, 2009) (Fehr and Tyran, 2001). Peeters (1999) and Gerlach and Smets (2000) also put forward the

argument that economic behaviour often reacts on the basis of nominal interest rates in the short run. Furthermore, the nominal MCI seems to be a reasonable approximation for the real MCI in the short run, in the context of a low inflation environment. See Costa (2000b) and the ECB (2002).

There are also other factors justifying the use of nominal variables. For example, a nominal MCI may be easier to construct and is also timelier as inflation data needed for the real measure are only available on a monthly basis, as opposed to the daily availability of nominal interest and exchange rate data. However, it should be noted that in a period of high inflation, the nominal index is likely to show more pronounced tightening than the real indices.

The selection of the ***MCI components*** is also an issue that has received more attention in recent years. Since the MCI components should be in line with the nature of the monetary transmission mechanism and with the appropriate structure of the relevant economy, it has been argued that other factors, such as long-term interest rates[12] and asset prices (i.e. house prices and stock prices), should also be included in the MCI. For the euro area, long-term interest rates play an important role in the monetary transmission mechanism, as investment and consumption behaviour is often dependent upon long-term rates.

Taking into account the increasing debate over the role played by asset prices in the monetary transmission mechanism, through wealth effects and balance sheet effects, the Financial Conditions Index (FCI) has been developed in recent years. Policy makers and international organisations often use the FCI in their assessment of the monetary policy stance. However, the definition of FCIs differs across methodologies. While some researchers compute FCIs that measure the tightness/accommodativeness of financial factors relative to their historical average in terms of an effective policy rate (e.g. Guichard and Turner, 2008), others measure the estimated contribution to growth from financial shocks in a given quarter (Swiston, 2008).

The FCI extends the MCI approach by including other financial variables, including stock prices, asset prices and long-term interest rates[13], but similar to the MCI, the index still suffers from certain criticisms, such as model dependency, ignored dynamics and parameter inconsistency. While a full discussion on such an index is beyond the scope of this article, a number of interesting findings are worth noting. Based on research at the BoC, which suggested that asset prices may offer important information about future inflationary pressures, Gauthier, Graham and Liu (2004) estimate a number of FCIs for Canada. They find that the FCI outperforms the MCI in many areas, and also that house prices, equity prices and bond risk premium, in addition to short and long-term interest rates and the exchange rate, are significant in explaining output in Canada. Goodhart and Hofmann (2001), also find that house and share prices are important variables in such an index for G7 countries, and that the FCI contains useful information about future inflationary pressures. A more recent example of the FCI's use is illustrated in a recent paper by Beaton, Lalonde and Luu (2009). It looks at the development and increasing importance of financial conditions in the US during the current crisis. They find that financial conditions have had a large negative impact on US GDP growth in the current recession[14] and that the monetary easing undertaken by the Federal Reserve over the recent financial crisis has not been sufficient to offset the tightening of financial conditions.

A final point related to the selection of the components is that neither money nor credit plays a role in standard representations of a MCI. For example, the same level of a MCI could be consistent with various rates of monetary growth, and in no way calls into question the importance of the money supply in

[12] For countries in which long-term financing relationships play a major role, it would be logically consistent to include a long-term interest rate. Fixed long-term interest rates exert a larger influence on consumption and investment decisions in several countries in Continental Europe, relative to the Anglo-Saxon countries (Costa, 2000).

[13] More recently, lending standards have also been included in FCIs to account for non-price credit conditions (Guichard and Turner, 2008).

[14] Their FCI suggests that financial factors subtracted between 4 and 7 percentage points from quarterly annualised growth in 2009 Q1.

the economy or ultimately the monetary nature of inflation. This is particularly relevant when there are quantity constraints or credit rationing. Given these shortcomings, the MCI should be interpreted with caution regardless of whether it is being used as an operational target, or merely as one indicator among many.

3.2 Interpretation Issues

Irrespective of the difficulties in constructing a MCI, interpreting changes in it in terms of their significance for current monetary policy is not easy. Whether it is appropriate or not for a central bank to make a policy change in response to a change in the MCI (in the case of the MCI being an operational target) depends on the factors underlying changes in the components. A given movement of the MCI may have different consequences in terms of the final policy objective. In particular, it is important to determine the nature of shocks causing movements in the exchange rate, and not mechanically follow movements in individual components, as highlighted in the case of New Zealand in Box 2. Furthermore, Siklos (2000) believes that the simplicity of MCIs implies a loss of information when the effects of the component variables are aggregated, as it can obscure the movements of the individual components. King (1997) also makes the point that ''any attempt to construct a simple monetary conditions index is akin to adding together apples and oranges'', particularly given that the exchange rate is not a policy instrument and therefore MCIs mix variables that are not of the same nature.

Given the difficulty in determining whether any particular reference period is ''neutral'' (Banque de France Bulletin Digest, 1996), most implementations focus on changes in the index compared with previous periods, to ascertain if monetary conditions have tightened or loosened, rather than looking at the absolute levels of the index. It is important to note that historical averages do not necessarily represent neutral conditions and furthermore, structural changes in the economy and differences in cyclical conditions may also affect what is understood as neutral conditions.

4. Constructing the MCIs

The following section focuses on developments in MCIs for the euro area, the UK and the US over the past decade. It is important to emphasise that the purpose of this section is not to speculate as to which weights may be best or even to assess the extent to which the MCIs portray an accurate picture of the monetary stance.

For each country, there are many plausible alternative weights specified by various institutions and academics. The choice of the weights can affect the overall level of the index and also the rate of change of the indices. In this analysis, a weight of 6:1 is used for the euro area, which is used by the European Commission[15], and weights of 3:1 and 10:1 are used for the UK and the US respectively. The latter weights have been applied by the IMF in the past. In terms of the data used in the construction of the MCI for each country/area, the short-term interest rate is proxied by the three-month money market rate while a broad trade weighted exchange rate proxies the exchange rate variable. These series are then deflated by consumer price indices[16]. Finally, the base/reference periods refer to the average of both interest and exchange rates from 1993 to present.

4.1 MCIs in Practice

Referring to Chart 1, it is evident that over the sample period (1999-2009) for the euro area, there appears to have been a marked tightening in monetary conditions post 2005, which is consistent with increasing interest rates. Despite the significant economic developments since the financial crisis, the MCI, while volatile, has not shown any substantial changes in its trend. Meanwhile, the MCI for the UK shows its only major shift in trend from around 2007 on. At this point both interest rates and exchange rates contributed to looser monetary conditions. The movement of the US MCI during the sample period has been more variable, and has tended to track changes in the interest rate, given this

[15] This ratio was derived from simulations of the OECD Interlink Model.
[16] Ex-ante real short-term interest rates were also calculated (using inflation 3-months forward), but the results were very similar.

Chart 1: International MCIs

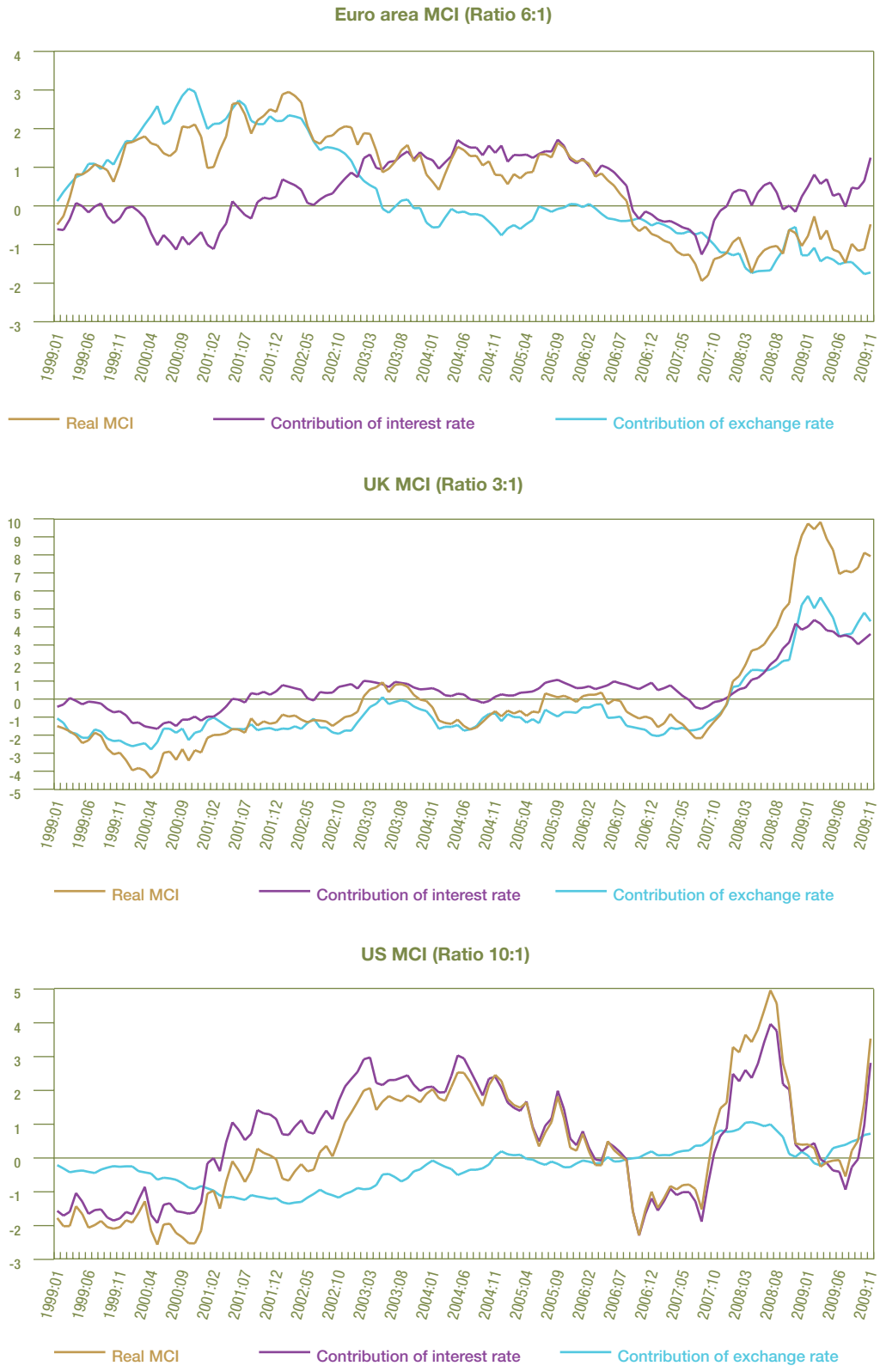
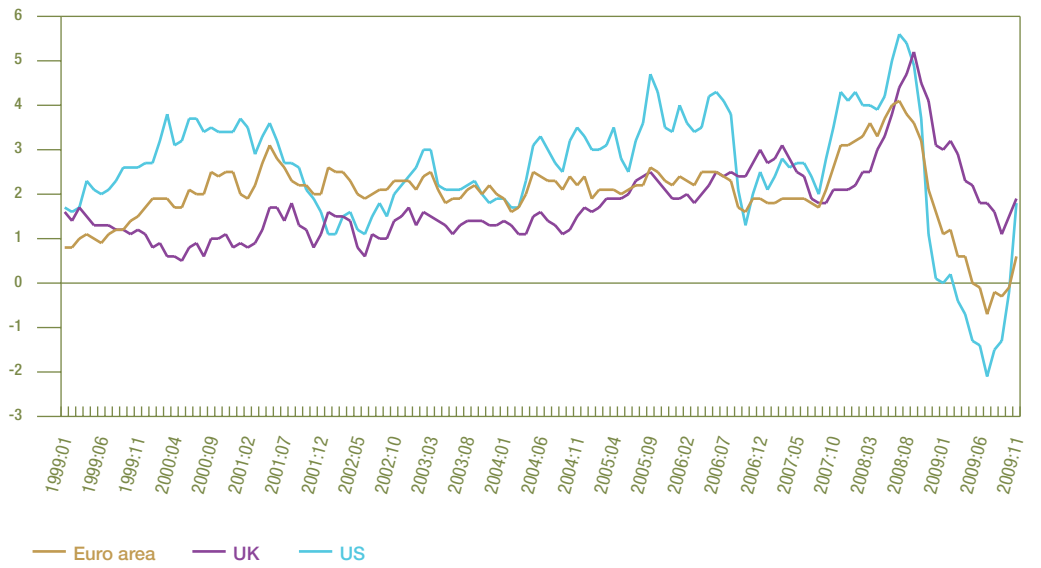


Figure 2: Inflation Rates



component's large weight in the index. Overall, in recent years the movement of the MCI in all three economies has been affected by volatile inflation, which has been reflected in the real interest rate — see Chart 2. However, it is important to note that since the base or reference period is just an average, international comparisons in absolute terms must be applied with prudence[17].

Finally, when examining the MCI in recent times, it is important to note that the financial turmoil led to heightened spreads between wholesale money market rates, which are usually included in the MCI, and central banks' policy rates. This illustrates some of the difficulties associated with the interpretation of the MCI, as monetary conditions may have tightened according to the MCI, even though policy rates had not changed. The MCI may fail to provide accurate information on what the relevant path for the policy rate should be when there is such a break in the relationship between money market rates and policy rates.

Conclusion

The Monetary Conditions Index was pioneered by the Bank of Canada in the early 1990s and was subsequently used by other central banks and international institutions across the world over the following decade. Initially, the MCI was used as an operational target by both Canada and New Zealand, but as problems emerged, it was given a less prominent role in monetary policy decisions, and in more recent times it has been used less frequently and merely as one indicator among a myriad of others (i.e. Taylor type rules) in the assessment of the monetary policy analysis. Therefore the main role of this paper has been to discuss the methodology used and the limitations that are evident, rather than to contribute to current conjunctural monetary analysis.

As an indicator, the MCI can be calculated in both real and nominal terms and used to assess how 'tight' or 'loose' monetary conditions are. It is important to remember that since there is no agreed 'neutral' level of monetary conditions, the index is best interpreted by looking at its movements and how it has changed relative to the past, as opposed to inferring anything about the absolute level.

As highlighted in this paper, the MCI has many shortcomings. In constructing the MCI, the

[17] Banque de France Bulletin Digest, 1996.

weights applied to each variable can vary significantly depending on the model used, so that there can be considerable uncertainty surrounding the appropriate weights. Also, the actual composition of the index may be problematic. Synthesizing the short-term interest rate and the exchange rate into a single index may be inconsistent since it combines a monetary policy instrument and a macroeconomic outcome, which is problematic if their interactions are not fully accounted for. Therefore, any indication of tightening or loosening as conveyed by movements in the MCI must be considered alongside a broader range of indicators. The shortcomings of the MCI have in part led to the development of FCIs, which seek to incorporate additional variables relevant to the economy and for monetary policy analysis. However, many of the problems previously mentioned associated with the implementation and interpretation of MCIs, equally apply to the use of FCIs.

Although the wide uncertainty surrounding its estimation and interpretation makes it an unreliable stand-alone element to assess the monetary policy stance, the MCI tries to proxy two of the most important channels in the monetary transmission mechanism and is simple to construct and a timely indicator. Monetary analysis for policy decisions requires a multi-dimensional and broad-based assessment of all information that may be relevant for price developments, and the MCI can provide complementary and timely information in this context.

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