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Is My Crown Better than Your Euro?

Exchange Rates and Public Opinion on the European Single Currency

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ABSTRACT

This article examines the influence of exchange rate fluctuations on public support for the euro. Existing studies of the two euro referendums in Denmark and Sweden have explained the outcomes primarily in terms of static factors, thereby ignoring the fact that support fluctuates over time. This article provides an analysis of the short-term dynamics in public support for the euro in the period leading up to the referendums. We argue that exchange rate fluctuations matter, because people attach symbolic value to their national currency and are less likely to surrender a strong currency. They are also less willing to accept the euro when it is seen as weak vis-à-vis other world currencies. Our case-study and time-series analyses of the two euro campaigns corroborate these propositions.

KEY WORDS

- currency
- euro
- exchange rates
- public opinion
- referendums

> The decline in the value of the euro against the dollar was the single most important reason why we lost the referendum.
>
> (Henrik Dam Kristensen, director of the Danish government's euro referendum campaign)

The national currency is one of the key symbols of national sovereignty and identity. Hence, when a government decides that it would be best to replace the national currency with another, more global, currency, some form of public consultation, such as a referendum, may be required in order to legitimize such a politically salient decision. This is what happened in Denmark in September 2000 and in Sweden in September 2003. Yet in both countries the electorate rejected the proposal to adopt the European single currency, the euro, despite opinion polls indicating high levels of support when the referendums were called. The extant literature on support for the euro has for the most part taken a static view of public opinion, analysing surveys at a given point in time and focusing on structural (or slow-changing) factors affecting people's opinion, while neglecting the dynamics of popular sentiments over time. Yet short-term dynamics may be important in deciding whether or not a proposal on the euro's adoption is accepted in a plebiscite.

One factor that, surprisingly, has received little attention in the literature is the exchange rate. Many cross-country studies speak of the importance of people's national and European identity in determining their level of support for the European single currency. However, they neglect the fact that the national currency is also a symbol of the country's identity. The question is whether the symbolic value that people attach to the national currency is stable or variable over time. We argue that the strength (or weakness) of a currency, as measured by its exchange rate, is an important measure of its symbolic value. The implication is that a currency's exchange rate is an important determinant of public support for monetary integration. In particular, it should be a key factor in explaining short-term fluctuations in public opinion, which are very relevant to political leaders who are considering launching a referendum on the issue.

The present article aims to examine this proposition by analysing the two euro referendums in Denmark and Sweden – the only popular votes so far on the adoption of the euro. These referendums provide apposite cases for examining the effect of exchange rates on public attitudes towards monetary integration. First, they provide relatively long time-series data on public support for monetary integration, which are not available in other settings. Second, they allow us to examine the effect of the different exchange rates regimes adopted in two otherwise politically and economically very similar countries. The article thus makes two contributions to the literature. First, it presents the first systematic examination of the effect of exchange rates on

support for monetary integration. Second, it illustrates the importance of examining dynamic factors when analysing referendum outcomes.

The article is organized as follows. The first two sections survey the existing literature on referendum choices and public support for the euro, and thereafter we present our theoretical expectations. These propositions are then examined; first, in two case studies of the referendum campaigns and, second, using time-series analysis. Interestingly, our findings suggest that the role of the exchange rate in influencing the Danes' and Swedes' opinion on replacing their crown[1] differs. The Danes are influenced by the euro's exchange rate with the US dollar whereas the Swedes focus on the *krona*'s exchange rate with the euro and the dollar. This is not surprising given the differences in the two countries' exchange rate regimes and the framing of the exchange rate issue in the referendum campaigns.

Explaining referendum choices

Most studies of vote choices in European referendums have focused on the individual-level predictors of voting behaviour, rather than the dynamics of opinion formation over time. These individual-level approaches to voting behaviour in European Union (EU) referendums can be divided into three schools: the 'community' explanation, the 'second-order election' school and the 'utilitarian expectations' school (see Garry et al., 2005; Hobolt, 2006).

The 'community' explanation focuses on individuals' values and beliefs. It argues that voting behaviour in EU referendums reflects people's underlying broad attitudes towards European integration. Hence, it is primarily voters' general fear about loss of sovereignty and national identity that encourages them to vote 'no' to EU ballots (Siune et al., 1994; Svensson, 2002). Another explanation of voting behaviour in EU referendums is inspired by the 'second-order' theory of elections (Reif and Schmitt, 1980). The important characteristic of 'second-order' elections is that they are regarded as being of lesser importance than national elections ('first-order') and, consequently, voter turnout is lower and protest-voting and voter-switching are more common. Several studies have applied this second-order model to EU referendums and have linked outcomes to attitudes towards national governments (Franklin et al., 1995; Franklin, 2002; Garry et al., 2005; Schneider and Weitsman, 1996). Finally, a third school contends that utilitarian (or economic) expectations determine voting behaviour in EU referendums. Hence, support for further integration should be strongest among those who have the most to gain economically from integration (Gabel, 1998; Gabel and Palmer, 1995).

All of these approaches to referendums can also be found in the literature that has sought to explain the Danish and Swedish euro referendums. In the Danish case, De Vreese and Semetko (2004b) find that Euroscepticism, government satisfaction and economic expectations all significantly influence voters' choices. For their part, Marcussen and Zølner (2003) argue that the euro was generally regarded as an 'elite project' and that the economic arguments presented failed to convince a majority of the population to support the euro. Equally, Jupille and Leblang (2007) find that economic considerations did not play a significant role in determining voters' position vis-à-vis the euro. Instead, it was 'community' issues that led voters to believe that adopting the euro would mean a loss of sovereignty for Denmark.

As with the Danish case, Lindahl and Naurin (2005) argue that the cleavage between the general public and the political elite was responsible for the Swedes' rejection of the euro in September 2003 (see also Widfeldt, 2004). Moreover, Aylott (2005) argues that the eurozone economies' bad performance at the time contributed to the feeling amongst Swedes that adopting the euro was not a panacea (see also Miles, 2004). In addition, the good performance of the Swedish economy at the time convinced a large part of the population that staying outside the eurozone was unlikely to have dire consequences (Miles and Lindh, 2004). As with Denmark, Jupille and Leblang (2007) find that sovereignty and trust in politicians were important factors in determining the Swedes' vote on the euro question.

To summarize, the proposal to adopt the euro in both Denmark and Sweden was considered an elite-driven project by the general population. Sovereignty preoccupations as well as trust in politicians were explanatory factors common to both countries' referendums, as suggested by the community and second-order explanations in the referendum literature. Moreover, although individual economic expectations played a role, a large portion of people in both countries felt that staying outside the eurozone was unlikely to have dire consequences for their country's economy.

Explaining public support for the euro in general

The above-mentioned three approaches have also been applied to explain public support for the euro across Europe. In accordance with the community explanation, Gabel and Hix (2005) and Kaltenthaler and Anderson (2001) find that national identity is an important determinant of euro support. From a utilitarian standpoint, given that monetary integration should increase trade, Banducci et al. (2003), Gabel (2001), and Gabel and Hix (2005) find that individuals with high involvement in international trade favour the euro more than individuals employed in the non-tradable sector. Studies of support for

the euro have also found that sociotropic economic concerns play a role (Banducci et al., 2003; Kaltenthaler and Anderson, 2001). For instance, Gärtner (1997) finds that citizens in countries with a looser fiscal policy and high deficits are more likely to support the euro (see also Gabel, 2001).

In general, these studies provide insight only into cross-national variation in public support for the euro; they do not examine the dynamics of public support for the euro over time. One notable exception is the study by Banducci et al. (2003), which examines public support for the euro from 1990 to 2000. Using pooled Eurobarometer survey data, they find, among other things, that citizens are more willing to hand over monetary sovereignty to the European level when their national currency is weak vis-à-vis the US dollar. By considering yearly data only, however, the authors do not examine the type of short-term dynamics that are most relevant to referendum outcomes.

Studying vote choices as a dynamic process rather than a static decision is very important if we want to understand the outcomes of referendums. The campaign period is considered to have a greater influence on public opinion in referendums than in elections (De Vreese and Semetko, 2004a,b; Hobolt, 2005). Referendums are generally characterized by a higher degree of electoral volatility, since the ballot issues are often relatively unfamiliar to voters, who therefore do not have firm pre-existing attitudes towards the issue at stake (Franklin, 2002; Hobolt, 2007; LeDuc, 2002). If voters know little about the specific ballot proposal and are relatively unconstrained by predispositions and party loyalties, they are more likely to be influenced by changes in the economic and political context, as well as by media exposure (De Vreese and Semetko, 2004b).

None of the studies of the two euro campaigns explicitly examines the development in vote intention prior to the vote. Indeed, many of the explanatory variables identified as salient by the existing literature on public opinion and the euro change only over longer time periods: e.g. Euroscepticism, political ideology and trust in politicians. Only two factors tend to fluctuate in the short term: government approval and economic expectations. There is thus a gap to fill in the literature by performing a (short-term) dynamic analysis of public support for the euro. This requires that we take into account a factor that has been neglected by the literature so far – namely the exchange rate – as a measure of the symbolic value of the national currency.

Theoretical expectations: Exchange rates and public opinion on the euro

There are good reasons to think that the exchange rate should be an important determinant of fluctuations in public opinion on monetary integration.

This is because a national currency often acts as a symbol of national identity (Cohen, 1998). For instance, Helleiner (2003) argues that the creation of 'national' money has historically been closely associated with nation-state building. A national currency is expected to give the inhabitants of a political entity a sense of collective identity. This explains why Müller-Peters (1998: 715) finds that 'the need for demarcation from other nations appears to manifest itself particularly in attitudes toward one's own currency'. However, this demarcation must create 'a feeling of positive distinction' (1998: 706). Hence, the symbolic value of the national currency must be positively related to its strength vis-à-vis other currencies. Economically, a strong currency can have both positive and negative effects. For instance, a strong currency can keep inflation lower because it makes imports cheaper. On the other hand, an open economy will see the competitiveness of its exports decrease as the currency's relative value appreciates. For individuals, the effect depends on where they find themselves in the economy. According to Frieden (1991), producers of non-tradable goods and services and international traders and investors should prefer a strong currency whereas export-oriented producers of tradables and import-competing producers of tradables for the domestic market should favour a weak currency. However, given ordinary citizens' generally low level of economic knowledge (Blendon et al., 1997), it is highly unlikely that most people have an in-depth understanding of the economic effects of exchange rate fluctuations. Therefore, people's level of identification with the national currency, on the basis of its relative strength, should derive much more from a symbolic rather than an economic rationale.

Anecdotal evidence supports the view that the value attached to a currency is positively related to the strength of the currency relative to other currencies.[2] In Canada, for example, Leblond (2003) has found that support for adopting a common currency with the United States increases when the Canadian dollar depreciates vis-à-vis the US dollar. Equally, Italians were quite happy to replace their devalued lira with a potentially strong and stable euro (Ahrendt, 1999). For their part, Germans were reluctant to give up their Deutsche Mark (DM) for the euro because the DM had come to represent the symbol of Germany's postwar stability and prosperity (Risse, 2003).

For public opinion on monetary integration in general and on Economic and Monetary Union (EMU) in particular, this means that people in countries with weaker currencies should be more favourably disposed towards the adoption of another currency, *ceteris paribus*, than people in countries with stronger national currencies. We can thus formulate our first hypothesis:

> **Hypothesis 1:** A stronger national currency is associated with a lower level of public support for the euro.

Along the same lines, it is reasonable to argue that the currency that is meant to replace the national currency has to be strong. After all, who wants to replace one weak currency by another? For example, Germans were not convinced that the euro would be as stable and strong as the DM it was meant to replace, even if the former was modelled on the latter.[3] Hence, we would also expect the public to be more reluctant to accept a replacement currency if it is seen to be weak vis-à-vis other major currencies, irrespective of the value of the national currency. This leads to our second hypothesis:

> **Hypothesis 2:** Voters are less likely to be in favour of adopting the euro when it is weak relative to other major currencies.

But these hypotheses hold only if citizens are aware of a currency's exchange rate. In a campaign leading up to a referendum on relinquishing the national currency, both sides may use information about the strength/stability of their preferred currency to argue in favour or against adopting a new currency. Hence, before proceeding to the statistical analysis of the impact of exchange rate changes on public opinion on the euro, we examine the Danish and Swedish referendum campaigns to show the extent to which the exchange rate was salient. These case studies are based on a systematic content analysis of the main newspapers in Denmark and Sweden during the period leading up to the vote,[4] as well as interviews with key actors. By analysing all articles relating to the euro referendum and exchange rate, we can identify the role that the exchange rate played in the public debate.

The referendum campaigns in Denmark and Sweden

The Danish referendum on the euro

Owing to the opt-outs obtained in 1993 following the Danes' rejection of the Maastricht Treaty, the Danish government was increasingly feeling isolated in the EU in the late 1990s. This spurred a debate about when to have a referendum to abolish the opt-outs, primarily the exemption from the eurozone. After a long period when the polls showed a favourable public attitude towards the euro, the centre–left Danish government decided, in March 2000, to call a referendum on joining the single currency for 28 September 2000. The proposal to join the euro was backed not only by the government but also by the main opposition party, employers' associations, most trade unions and 46 of 48 daily newspapers (Downs, 2001). Denmark also comfortably met the economic criteria of the EMU and its economy was in cycle with the rest

of the eurozone. What is more, Denmark had reached an agreement with the European Central Bank in 1998 to participate in the new Exchange Rate Mechanism (ERM II), which meant that the value of the Danish krone was fixed against the euro. Even if outside the euro area, Denmark's ability to follow an independent monetary policy was thus restricted.

Despite the strong position of the 'yes' side, the campaign became an uphill struggle for the government. During the very long and intensive campaign, the majority in favour of the euro was gradually eroded. The government's key argument was that the single currency would stimulate economic growth, fuel employment and induce economic stability. It also warned that a 'no' vote could lead to higher interest rates and the loss of more than 6000 jobs. In contrast, the 'no' side focused on the loss of national sovereignty and the threat of a political union. The government's focus on the economic logic of accession backfired during the campaign for two main reasons. First, the highly reputable Danish Economic Council ('The Wise Men') published a report in May 2000 that concluded that the economic consequences of not joining would be minimal and that a 'wait-and-see' approach was sensible. Second, and more importantly, the euro's steep decline against the US dollar (see Figure 3) created uncertainty about the (replacement) currency's worth. The euro's fall was widely reported in Danish newspapers and contributed to the feeling that a 'no' vote might be safer than joining a freefalling currency. The 'no' side was quick to espouse the view that it would be risky to adopt such a weak currency. Of course, the Danish crown was equally declining in value against the dollar, as it was pegged to the euro, but this was rarely mentioned in the news coverage. Instead, the declining value of the euro was front-page news and subject to heated discussion on the debate pages from the time the euro was launched in 1999. Because most newspapers favoured the introduction of the euro, leading articles would emphasize that a weak currency did not necessarily imply that the euro project was doomed to fail. Yet, in the minds of the voters, the image of the plummeting currency was powerful. As one of the editorials commented: 'the weak euro is a serious threat to the government's ambitions on joining the euro. When the very symbol of the EMU is in such a serious crisis, it will be close to impossible to convince the Danes to vote yes' (*Information*, 2000). Hence, the declining value of the euro against the dollar played a key role in the Danish referendum campaign. As the Foreign Minister at the time, Niels Helveg Petersen, noted:

> The euro referendum was not well organized by the 'yes' side. We made a number of mistakes. And the euro was in free-fall against the dollar. The core of our argument was that the euro would create stability. The fall of the euro made the 'no' side's argument – 'Let's wait and see' – seem very credible.[5]

The chief campaign strategist for the government, Henrik Dam Kristensen, also confirmed this interpretation of events: 'The most important factor leading to the decline in public support was the exchange rate between the euro and the dollar. The euro was in free-fall. It was impossible for us to explain the connection.'[6] Ultimately, faced with the option of choosing to join a declining single currency and relinquish a symbol of national sovereignty or adopting a much safer 'wait-and-see' policy, a majority of Danes chose the latter. A majority of 53.1% voted 'no' with a turnout of 87.5%.

The Swedish referendum on the euro

The debate about adopting the euro began soon after Sweden joined the EU in January 1995. Unlike Denmark (and the UK), Sweden did not have an opt-out agreement, and was thus bound to enter the EMU once it satisfied all the convergence criteria. Yet, following the advice of an expert commission (Calmfors et al., 1997), which concluded that the economic arguments did not yet favour joining the EMU, the government decided to adopt a wait-and-see approach in the late 1990s.

When Swedish Prime Minister Göran Persson announced in November 2002 that there would be a referendum on the euro on 14 September 2003, the debate about Swedish membership of the eurozone was already alive and kicking. It all started with a declaration by Persson in November 1999 that Sweden 'must eventually join the euro' (Brown-Humes, 1999). One of the main arguments used by Persson and others who favoured the euro was the fact that the krona had a history of weakness, and it would be repeatedly devalued by the government to accommodate inflation resulting from a generous welfare system. The depreciation of the krona against the euro, which began in the fall of 2000 and continued in 2001 (see Figure 2), only reinforced this point of view (Brown-Humes, 2001; George, 2001).

> The most important, I believe, is that we have got a highly weakened crown. Many Swedes have travelled abroad and they do not think that it is really nice to experience. I believe that it is the main argument for Swedish membership in EMU. (Comment by Göran Persson, TT, 2001)

The problem for euro supporters was that the exchange rate between the krona and the euro changed direction around January 2002 (see Figure 2). As a result, the euro advocates had to resort to other economic arguments to make their case. For example, they claimed that being part of the eurozone would increase Sweden's trade with the other EU member states and decrease interest rates, which would make mortgage payments lower. Furthermore, joining the eurozone would maintain, if not increase, Sweden's influence within the EU.

Opponents of the euro pointed out that Sweden's economic performance was better than that of the eurozone, where the economies of France, Germany and Italy were more or less stagnating and close to being in breach of the Stability and Growth Pact (Jonung, 2004). As such, the eurozone was not an example of economic growth and stability and it was easy to argue that it was economically better for Sweden to have a flexible exchange rate regime with its own national currency. Another argument that became popular amongst Swedes was that a 'no' vote was not irreversible, whereas a 'yes' vote was. Given the uncertainties associated with the eurozone's economic performance, many Swedes were inclined to 'wait and see', just as the Danes did a few years before (Brown-Humes, 2003).

With the krona weakening against the euro as the referendum date approached (see Figure 2), there were some attempts by the 'yes' side to revive the weak currency argument. For example, a couple of leaders in *Dagens Nyheter* a few days before the vote reminded readers that the krona had traditionally been a 'falling' currency. Nevertheless, on 14 September 2003, with more than 80% of eligible voters taking part in the referendum, 56.1% voted against the euro while 41.8% voted in favour. It was a bitter defeat for the 'yes' side, which was seen as the likely winner when the campaign was launched 10 months earlier. Having decided to run its campaign on economic arguments, it saw most of these lose their power over time, first and foremost the krona no longer appearing to be a weak currency.

Data and methods

Following these case studies, which clearly illustrate the importance of the exchange rate issue during the campaigns, we now present a more formal statistical test of the impact of exchange rate fluctuations on public support for the euro. Our dependent variable is support for joining the euro. We use aggregated survey data (monthly average) of the percentage of people who would say 'yes' in a referendum on the euro (as a percentage of all voters, excluding people who say 'don't know'). The appendix provides details on the data sources. Figure 1 shows vote intention in Denmark and Sweden from January 1999 to January 2004 (the stippled vertical lines indicate the two referendums). We have chosen January 1999 as the starting point for our analysis, since this is the month the euro was introduced.[7] There is no clear trend in either of these time series over this five-year period. Average support was higher in Denmark at 54.5% (standard deviation of 3.4) than in Sweden (48.5%, with a standard deviation of 6.1).

As described above, we are interested in analysing the effect of currency developments on public support for the euro. First, we examine whether the

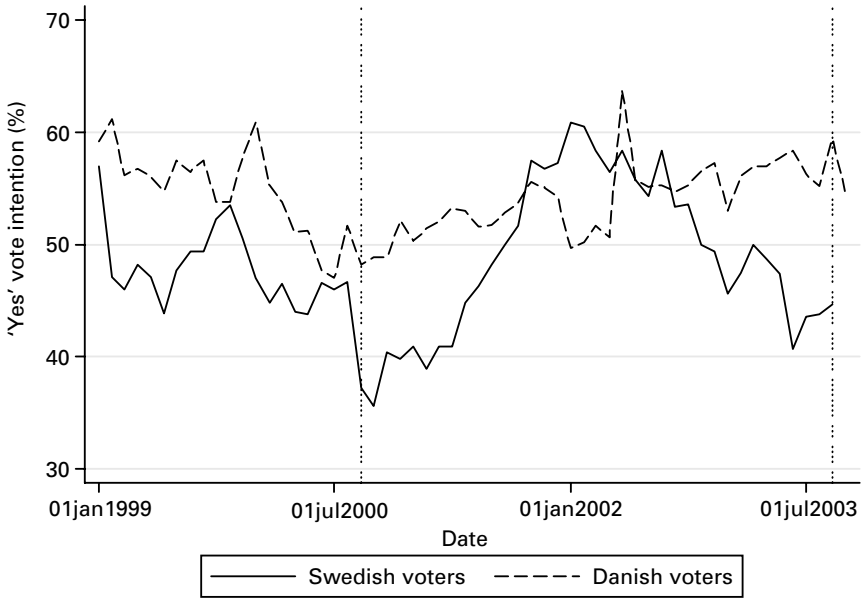

Figure 1 Vote intention in Denmark and Sweden, 1999–2003.
Notes: Monthly averaged data on vote intention (excludes people who are undecided); see the appendix.

strength of the national currency, the krone (DKK)/krona (SEK), relative to the euro has an effect on vote intention (Hypothesis 1). Second, we test whether the strength of the euro relative to the US dollar has an impact on public opinion (Hypothesis 2). In both cases, we use monthly averaged exchange rate data (see the appendix).

Figure 2 shows the exchange rate between the Swedish and the Danish currencies and the euro. This figure shows very little movement in the DKK/euro exchange rate, because the Danish currency was pegged to the euro after January 1999 (under ERM II). The only development in the DKK/euro exchange rate is a short blip after the Danish rejection of the euro in September 2000. In contrast, there is quite substantial movement in the Swedish exchange rate. Thus, we expect that, as the SEK/euro exchange rate increases (i.e. the krona depreciates relative to the euro), public support for the euro will also increase, since a weaker national currency should find less favour with the population.

Whereas the DKK/euro exchange rate should not have any impact on Danish public opinion, we expect the exchange rate between the US dollar and the euro to have a significant effect. As described above, the plummeting value of the euro vis-à-vis the dollar came to symbolize the dangers of joining this new currency and relinquishing the Danish krone. Figure 3 shows

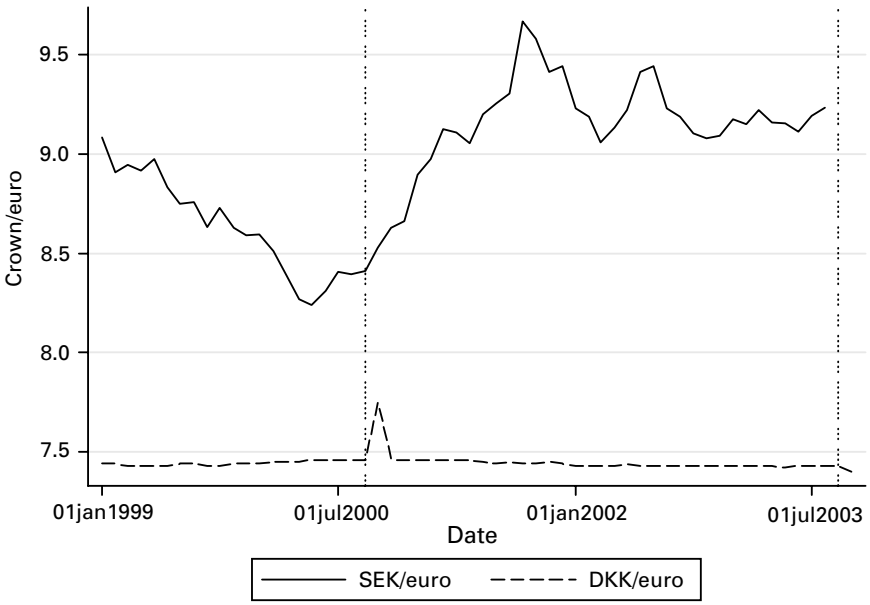

Figure 2 Crown/euro exchange rate development, 1999–2003.

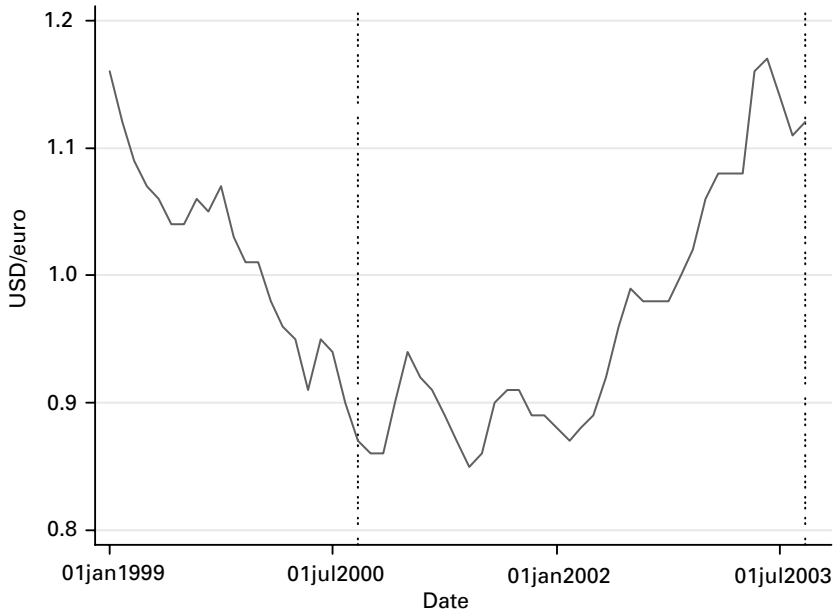

Figure 3 USD/euro exchange rate development, 1999–2003.

the development in the USD/euro exchange rate. Note that a decrease in the value of the USD/euro ratio implies a weaker (i.e. depreciated) euro against the dollar, whereas an increase means a stronger (i.e. appreciated) euro vis-à-vis the dollar.

In addition to the exchange rates, we include control variables in the model. These controls correspond to the relevant variables identified in the literature described in the first two sections. However, given our focus on the short-term dynamics of public support for the euro, we retain only those that vary from month to month: government support and economic expectations. Economic expectations are measured using the monthly consumer confidence index (CCI), which attempts to gauge consumers' feelings about the current condition of the economy and their expectations about the economy's future direction. Moreover, we include a measure of the *Misery index* (the sum of unemployment and inflation rates) to capture the 'objective' state of the economy. In order to test the 'second-order election' theory that referendums are fundamentally about feelings toward the government, we also include a *Government support* variable in our model. This is measured as the percentage of voters who would vote for the governing party (Social Democrats in Sweden) or coalition of parties (in Denmark) if there were an election tomorrow.

Modelling euro support

Because our data are time-series data, we need to take into account time-series dependencies when modelling the data. Failure to attend to these dependencies is likely to lead to spurious results (Granger and Newbold, 1977; Ostrom, 1978). To avoid these problems, we rely on the Box–Jenkins model-building procedure of identification–estimation–diagnosis (Box and Jenkins, 1976). Checking for trending, we find that both the Danish and the Swedish public opinion series are stationary (we can reject the null hypothesis of unit root using a Dickey–Fuller test[8]). We find, however, that both time series are autoregressive first-order processes. To account for this autocorrelation we include a lagged dependent variable. We thus use a lag of Y to model the dynamics in the data. This also makes substantive sense: public support for the euro in month t is partly determined by public opinion in month $t - 1$. Finally, we perform a Q-test and plot the residuals. Both tests confirm that the residuals are white noise. In our final tables, we also report the Durbin–Watson and Q statistics, which indicate that autocorrelation is not present.

In addition to including a lag of public support for the euro, the model includes a one-month lag of the exchange rate variables. We also lag the

misery index since data on inflation and unemployment are published with a time-lag, and it may take time for people to respond to these changes in the economy. We expect the effect of consumer confidence and government approval on vote intention to be contemporaneous since these variables capture how people feel about the economy and the government.[9] Thus, the model can be expressed in the following way:

$$Y_t = \alpha + \beta_1 Y_{t-1} + \beta_2 CrownEuro_{t-1} + \beta_3 USDEuro_{t-1} + \beta_4 Misery_{t-1} + \beta_5 CCI_t + \beta_6 Govt_t + \varepsilon,$$

where the parameter β_1 represents the effect of the lagged dependent variable and β_2 to β_6 capture the effects of the other independent variables on support for the euro, and α is the intercept term.

In a recent paper, Bernhard and Leblang (2006) argue that public support for the government affects exchange rates, not just the other way around. In the present case, this could imply that public opinion on the euro would affect the exchange rate. Although our causal argument calls for exchange rate changes to come *before* public opinion changes, it is possible that currency markets' expectations of public opinion in the future could affect the current level of the exchange rate, and this raises the question of endogeneity. Yet, by using a lag of Y in the model, we actually capture a large portion of the markets' expectations since they are formed on the basis of current public opinion results (see Bernhard and Leblang, 2006). Moreover, if there remains any bias in the estimated coefficients for the exchange rate variable, it actually works in our model's favour. This is because currency markets' expectations of increased (decreased) support for the euro in the future will lead to an appreciation (depreciation) of the national currency today, and, in turn, an appreciation (depreciation) of the currency today will lead to a decrease (increase) in public support for the euro in the future. Consequently, any endogeneity works to dampen (rather than enhance) the effect of the exchange rate on public support for the euro. Hence, if we get coefficients that are both statistically and substantively significant for the explanatory effect of the exchange rate, then it makes our results even more robust.

To explore the possibility of any two-way relationship between the exchange rates and public support for the euro further, we perform a Granger causality test. The concept of Granger causality – developed by Granger (1969) and used in vector autoregression (Freeman et al., 1989) – is a method that relaxes assumptions about causal direction and lag length and so allows one to assess the directionality of influence. The technique involves regressing each variable on its own lagged values and on the other variables' current and lagged values. We have hypothesized that exchange rates affect vote intention rather than vice versa. A time series X is said to 'Granger-cause' Y

Table 1 Direction of Granger causality between vote intention and exchange rates

	Denmark *Endogenous variables*			*Sweden*		
Exogenous variables	*'Yes' vote*	*Crown/ euro*	*USD/ euro*	*'Yes' vote*	*Crown/ euro*	*USD/ euro*
'Yes' vote	–	.105	.135	–	.431	.884
Crown/euro	.337	–	.942	**.001**	–	.214
USD/euro	**.003**	.554	–	.609	.056	–

Note: Cell entries are *p*-values from Granger causality Wald tests. Entries in bold are significant at the 95% level. These Granger causality tests are based on a fully specified vector autoregression model, which also includes the following auxiliary variables: *Misery index* (unemployment + inflation), *Consumer confidence* and *Government support* (not shown here).

if it can be shown that those X values provide statistically significant information about future values of Y. In practice, we test the null hypothesis that X *does not* cause Y.[10] Table 1 shows the results for both Denmark and Sweden.

Table 1 corroborates our expectations that exchange rates do Granger-cause vote intention, but vote intention does not cause exchange rates. In the Danish case, we can reject the null hypothesis that the USD/euro exchange rate does not cause the vote intention, whereas we fail to reject the null hypothesis that vote intention does not cause the USD/euro. Given that the Danish krone is pegged to the euro, it is also no surprise that this exchange rate does not seem to cause vote intention. In the Swedish case, it is more plausible to argue that speculators may have responded to changes in public opinion (given that the krona is not pegged to the euro), and hence that there is a two-way causal relationship between the SEK/euro exchange rate and public opinion. Yet the Granger causality test does not suggest a two-way relationship: the SEK/euro exchange rate does Granger-cause vote intention, whereas vote intention does not cause the SEK/euro or the USD/euro exchange rate. Hence, given these results, we can confidently return to our model of the relative effects of exchange rates on public support for the euro.

Results

Tables 2 and 3 show the statistical results of our estimated model. Our two hypotheses concerning the relationship between exchange rates and public opinion on monetary integration are corroborated.[11] However, some clarification is required.

Table 2 Support for the euro in Denmark

	Model 1		*Model 2*		*Model 3*	
	Coeff.	*S.E.*	*Coeff.*	*S.E.*	*Coeff.*	*S.E.*
'Yes' vote$_{t-1}$	0.37**	0.11	0.24*	0.13	0.22*	0.13
Crown/euro$_{t-1}$	–12.45	8.23	–	–	–10.14	8.14
USD/euro$_{t-1}$	–	–	11.21**	5.48	10.15*	5.51
Misery index$_{t-1}$	0.41	0.53	–0.20	0.61	–0.16	0.60
Consumer confidence	–0.61**	0.14	–0.54**	0.15	–0.54**	0.14
Government support	0.12	0.08	0.13	0.08	0.11	0.08
Intercept	119.54*	64.19	27.42**	7.38	105.57	63.19
Adj-R^2	.51		.53		.53	
DW statistic	2.10		2.06		2.02	
Q statistic	14.83		14.95		15.06	
N	57		57		57	

** $p < .05$; * $p < .10$

When looking at the results for Denmark in Table 2, we observe that the coefficient for the exchange rate between the krone and the euro is not statistically significant. This makes sense, since the *krone* was pegged to the euro throughout the period (see Figure 2). We do expect, however, the strength of the euro to have a strong influence on Danes' opinion on adopting the euro, which is what we find in Model 2. The coefficient for the USD/euro exchange rate is positive and statistically significant. Substantively, it means that a 0.1 increase in the exchange rate (i.e. Americans have to pay 10 US cents more for 1 euro) is associated with a 1 percentage point increase in the proportion of Danes supporting the euro (model 3).

Table 2 also shows that lagged vote intention is significant, which implies that vote intention in the previous month is correlated with current vote intention even after controlling for the exchange rate of the previous month. In terms of the other control variables, the only one that is statistically significant is consumer confidence: as the Danes become more confident in their economic prospects, they are less inclined to replace the crown by the euro. This result contrasts with the finding in individual-level studies in the literature, where people who are more positive about their own economic prospects are more likely to vote 'yes' (see De Vreese and Semetko, 2004b). However, it could be that confidence in the national economy at the aggregate level can have a negative effect on euro support since such optimism may make people less susceptible to the government's doom-and-gloom scenario. We found

little support for the second-order expectation in this dynamic model, since the effect of government support on vote intention is insignificant.

The Swedish results differ from the Danish ones. In Table 3, we can see that the coefficient for the SEK/euro exchange rate is positive and statistically significant, whether or not we include the USD/euro exchange rate in the regression. This confirms Hypothesis 1. Substantively, the result from model 3 means that public support for the euro in Sweden increases by 7.9 percentage points when Swedes pay an extra crown for 1 euro (i.e. the crown depreciates vis-à-vis the euro). What is more surprising is the negative coefficient found for the USD/euro exchange rate. This is in direct opposition to Hypothesis 2. Why would Swedes be more favourable towards the euro when the latter is weaker vis-à-vis the dollar? One way to explain this odd result is to look at the relationship between the SEK/USD exchange rate and public support for the euro. In model 4 in Table 3, we can observe that the coefficient for this variable is positive and statistically as well as substantively significant, even though we include the SEK/euro exchange rate in the regression. This suggests that Swedes also attach some degree of importance to their currency's strength vis-à-vis the world's other leading currency. In a sense, if one's national currency is strong against both the dollar and the euro, then it is surely worth keeping; its symbolic value is high. This is also in line with our findings of both exchange rates being widely reported in the Swedish media before (and after) the referendum. This result for the SEK/USD exchange rate implies that the USD/euro exchange rate result is only a statistical artefact that arises because SEK/euro = SEK/USD*USD/euro. If the relationships between the SEK/euro and SEK/USD exchange rates and public support for the euro are both positive, then by definition the relationship between the USD/euro exchange rate and public support for the euro has to be negative. In sum, because the krona fluctuates vis-à-vis other currencies, the Swedes' preoccupation rests with their national currency's strength, not the euro's. In the Danish case, given that the krone was already tied to the euro, it made sense to focus on the relative strength of the euro.

Looking at the control variables in the Swedish case, we find in models 3 and 4 that government support has a positive, but statistically insignificant, effect on support for the euro, just like in Denmark. What is a bit harder to explain is that the coefficients for both the misery index and consumer confidence are positive and statistically significant, contrary to the Danish case. This suggests that popular support for the euro increases when the economy is performing less well, yet that when Swedes feel less confident about their economy they prefer to keep the krona. These mixed views suggest that Swedes see their flexible exchange rate regime as a kind of insurance mechanism against an economic slowdown. High unemployment and

Table 3 Support for the euro in Sweden

	Model 1		*Model 2*		*Model 3*		*Model 4*	
	Coeff.	*S.E.*	*Coeff.*	*S.E.*	*Coeff.*	*S.E.*	*Coeff.*	*S.E.*
'Yes' vote$_{t-1}$	0.65**	0.08	0.77**	0.08	0.63**	0.08	0.63**	0.09
Crown/euro$_{t-1}$	7.60**	2.48	–	–	7.87**	2.36	6.77**	2.39
USD/euro$_{t-1}$	–	–	–9.33*	4.27	–9.92**	3.90	–	–
Crown/USD$_{t-1}$	–	–	–	–	–	–	1.04**	0.42
Misery index$_{t-1}$	1.69**	0.74	1.62**	0.77	1.94**	0.71	1.91**	0.71
Consumer confidence	0.18**	0.08	–0.01	0.05	0.19**	0.07	0.19**	0.07
Government support	0.05	0.14	0.08	0.14	0.04	0.13	0.05	0.13
Intercept	–65.60**	21.86	7.57	7.27	–58.63**	20.93	–68.28**	20.85
Adj-R^2	.80		.78		.82		.82	
DW statistic	1.81		1.87		1.99		1.99	
Q statistic	21.68		28.31		24.07		24.30	
N	56		56		56		56	

** $p < .05$; * $p < .10$

inflation mean that their country's monetary policy is inadequate. Less confidence about the economy's future, however, requires some form of insurance, which a flexible exchange rate provides (a depreciation of the currency should stimulate the economy through exports and lower interest rates). In the case of Denmark, there are not such mixed feelings because the krone is pegged to the euro. Therefore, it is only when consumer confidence decreases that Danes are more favourable to adopting the euro.

The above explanations, although needing further enquiry, are in line with Jupille and Leblang's (2007) finding that economic calculations in terms of giving up a flexible exchange rate regime for a fixed one were salient in determining the Swedes' choice for or against adopting the euro, whereas they were less salient in Denmark, where a fixed exchange rate regime was already in place.

Conclusion

The present study of the Danish and Swedish euro campaigns has shown that the exchange rate issue was highly salient. However, the framing of this issue was very different in the two campaigns, owing to the differences in exchange rate regimes. In Denmark, where the krone was pegged to the euro, the focus was on the value of the euro vis-à-vis the US dollar. The decline in this value came to symbolize the general weakness of and uncertainty about the EMU project. In Sweden, where the krona floated against the euro and other currencies, the focus was on its relative value. When it was depreciating against the euro, many supporters of Sweden's participation in the EMU claimed that the crown's weakness was the main reason why it should be replaced. However, when the crown began appreciating against the euro, the argument fell flat. In fact, it reinforced the 'no' side's position that Sweden was economically better off with its own currency. The time-series analyses of support for the euro corroborate these stories. In Denmark, the value of the euro vis-à-vis the US dollar had a significant impact on the likelihood of voting 'no'. Given this result, one could argue that the Danish government (unknowingly) chose the worst possible time to hold a referendum on the euro, just as the euro's relative value had hit rock bottom. In Sweden, the value of the national currency vis-à-vis the euro and the dollar shaped public opinion. Using Granger causality tests, we have also shown that exchange rates influence public opinion, rather than vice versa.

The findings suggest that the omission of exchange rates from almost all existing analyses of public support for the euro is an oversight. This article has argued that exchange rates capture the symbolic value that individuals

attach to their national currency. This complements the existing 'community explanations' of support for monetary integration, which have shown the importance of identity and sovereignty concerns. The article has shown that a strong national currency becomes a symbol of national strength, which citizens are less willing to relinquish; equally, a weak 'replacement' currency represents instability and frailty in the minds of people. In other words, the value of a currency vis-à-vis other currencies is used by citizens as a cue to its social worth. Our results are also noteworthy because they illustrate the importance of analysing the dynamics of public opinion, especially short-term ones, rather than focusing solely on the determinants of the final vote choice as the extant literature has done so far.

Although we find our argument and results about the role of exchange rates in explaining short-term fluctuations in public support for the euro compelling, we cannot conclude with any certainty that they can be generalized to other countries. However, the results obtained by Banducci et al. (2003) with respect to EU countries and Leblond's (2003) study of Canada suggest that Denmark and Sweden are not isolated cases. Future work will we hope be able to explore this relationship between exchange rates and public support for monetary integration further.

Appendix

Data sources

Support for the euro:
Denmark: Gallup, Sonar, Greens, IFKA, Megafon, Vilstrup, GfK, Eurobarometer
Sweden: Demoskop, TEMO, SIFO, Gallup

Support for the government:
Denmark: Gallup
Sweden: Demoskop, TEMO

Exchange rate data:
Denmark: Danmarks Nationalbank (http://www.nationalbanken.dk)
Sweden: Sveriges Riksbank (http://www.riksbank.com)

Unemployment data:
Denmark: Statistics Denmark (http://www.statbank.dk)
Sweden: Statistiska centralbyrån (http://www.scb.se/AM0401-EN)

Consumer Confidence Index:
Denmark: Statistics Denmark (http://www.statbank.dk)
Sweden: Konjunkturinstitutet (National Institute of Economic Research) (http://www.konj.se/)

Inflation data:
Denmark: Statistics Denmark (http://www.statbank.dk)
Sweden: Statistiska centralbyrån (http://www.scb.se)

Notes

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1 Denmark's currency is called the *krone* and Sweden's is called the *krona*. Both names mean 'crown' in English. All interview and newspaper quotes are translated by the authors.
2 If the exchange rate is to matter for a currency's symbolic value, it requires that people be aware of its exchange rate. Unfortunately, there are no studies that examine individuals' awareness level of the national currency's exchange rate. Anecdotal evidence suggests that people in open economies are generally aware of the exchange rate relative to major currencies such as the US dollar or the euro. This is because the media regularly report and discuss the exchange rate(s).
3 Brettschneider et al. (2003) argue that the depreciated value of the euro vis-à-vis the US dollar between January 1999 and the beginning of 2001 and television coverage of this explain why Germans had a negative view of the euro at the time.
4 The following Danish newspapers were analysed from January 1999 to September 2000: *Aktuelt*, *BT*, *Berlingske Tidende*, *Ekstra Bladet*, *Information*, *Jyllandsposten*, *Kristeligt Dagblad*, *Politiken* and *Weekendavisen*. The following Swedish newspapers were analysed between January 2002 and September 2003: *Aftonbladet*, *Dagens Nyheter*, *Göteborgs-Posten*, *Svenska Dagbladet*, and *Sydsvenka Dagbladet*.
5 Interview with Niels Helveg Petersen, January 2004.
6 Interview with Henrik Dam Kristensen, January 2004.
7 Our choice of starting point means that we analyse support both before and after the Danish referendum. Given that the value of the euro was made very salient in campaigns, we have no reason to believe that it would cease to influence public support after the vote. Nonetheless, the results for Denmark are robust when we focus on just the period prior to the referendum.
8 The test statistics of the augmented Dickey–Fuller unit root test with drift are –3.84 (p-value .000) for the Danish vote intention time series and –2.15 (p-value .017) for the Swedish time series. Hence, in both cases we can reject the null hypothesis of unit root.
9 Note that our results are robust to different model specifications both with and without lags.
10 To run our Granger causality tests, we first estimated a vector autoregression (VAR) model for each of our two data sets, using likelihood ratio tests to select the appropriate lag-order for the VAR, which was 1 lag in the Danish case and 2 lags in the Swedish case. The key results are robust when we estimate the VAR with higher lag orders.

11 These results are not time sensitive, which means that the regressions' estimated coefficients do not vary (in a statistically meaningful way) as we get closer to the referendum.

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