

## Croatia on the road to euro adoption: Assessing the recent literature on exchange rate misalignments<sup>7</sup>

*Im Mai 2018 verabschiedete die kroatische Regierung eine Strategie zur Einführung des Euro in Kroatien, basierend auf einem bereits im Herbst 2017 veröffentlichten Strategiedokument. Das Euro-Strategie-Dokument sieht kein Zieldatum für den Euroraumbeitritt vor und enthält vielmehr eine ausführliche Folgenabschätzung. Diese kommt zu dem Ergebnis, dass die Vorteile der Euro-Einführung überwiegen, vor allem angesichts des hohen Währungsrisikos, welches auf die starke Euroisierung des Landes zurückzuführen ist.*

*Vor der Euro-Einführung muss Kroatien für mindestens zwei Jahre dem Europäischen Wechselkursmechanismus (ERM II) beitreten und erfolgreich Wechselkursschwankungen innerhalb eines Rahmens um die zuvor definierte „central rate“ halten. Die „central rate“ ist normalerweise auch jener Wechselkurs, zu dem die nationale Währung in Euro konvertiert wird. Die richtige Festlegung dieses Wechselkurses im Einklang mit makroökonomischen Variablen ist daher von großer Bedeutung. Zudem geben Länder, die den Euro einführen, ihre unabhängige Geldpolitik und somit auch den nominellen Wechselkurs als ökonomischen Anpassungsmechanismus auf.*

*Im Vergleich zu manch anderen Euro-Beitrittsländern befindet sich Kroatien in einer besonderen Position, da Kroatien seit 1991 seinen Wechselkurs zuerst an die Deutsche Mark und seit 1999 an den Euro gekoppelt hat. Das Wechselkursregime kann als „an einem gleitenden Leitkurs orientierte Wechselkurspolitik“ bezeichnet werden. Dies bedeutet, dass Kroatien bereits einen klaren Kandidaten für die „central rate“ besitzt, sowie dass es schon seit 1991 nur eine sehr limitierte nationale Geldpolitik nutzen kann.*

*Zur Frage der Angemessenheit des derzeitigen nominellen Wechselkurses als „central rate“, lassen sich rezente Studien heranziehen, die sich mit der Frage beschäftigen, ob der kroatische Wechselkurs in den letzten Jahrzehnten im Einklang mit einem zuvor definierten Gleichgewichtswechselkurs war. Die Studien nutzen hierfür unterschiedliche Methoden, die sich vor allem aufgrund unterschiedlicher Definitionen des Gleichgewichtswechselkurses stark unterscheiden. Sie sind daher nur begrenzt miteinander vergleichbar. Jedoch lässt sich feststellen, dass fast alle Studien für die Zeit nach der Finanzkrise eine leichte oder starke Überbewertung des (meist realen, effektiven) Wechselkurses feststellen. Die Methode des IMF ist die umfassendste, da sie drei verschiedene Modelle, sowie normative Anpassungen beinhaltet. Im letzten Artikel IV Report stellte der IMF fest, dass sich der kroatische Wechselkurs im Einklang mit den mittelfristigen Fundamentaldaten befindet. Die größte Überbewertung des Wechselkurses findet die Studie des Vienna Institute for International Economic Studies, Gligorov et al. (2017). Holzner & Vidovic (2018) schließen hier an und argumentieren, dass das Wechselkursregime in Kroatien und die Überbewertung der Kuna zur Länge und Tiefe der kroatischen Rezession nach der Krise beigetragen hat.*

### **Defining the central rate as a key step towards euro adoption**

In autumn 2017 the Croatian government and central bank published a draft strategy for Croatia's euro area accession which was adopted by the Croatian government on May 10 2018. As a necessary prerequisite for euro adoption, Croatia has to successfully participate in the European Exchange Rate Mechanism (ERM II) for at least two years. This means that it needs to agree on a so-called central exchange rate, a fixed exchange rate between the euro and the Croatian kuna. Further, exchange rate fluctuations need to stay within a set range within a period

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<sup>7</sup> Autorin: Katharina Allinger (Abteilung für die Analyse wirtschaftlicher Entwicklungen im Ausland).

of at least two years. The central rate tends to become the irrevocable exchange rate at which the national currency is converted to the euro. Setting the central rate at the right value is therefore economically very important for any euro-accession country. Moreover, converting to the euro implies a loss of an independent monetary policy and the loss of the nominal exchange rate adjustment mechanism.

For any country adopting the euro the following two questions are of importance: firstly, what should be the value of the ERM II central rate? Answering this question often requires determining some sort of an equilibrium exchange rate for the country in question. Secondly, how important is the nominal exchange rate as an adjustment mechanism in the respective country and would the adoption of the euro have severe, negative economic consequences.

Compared to many other potential euro area candidate countries, Croatia is a somewhat special case given its exchange rate regime. Since 1991, Croatia has had a tightly managed exchange rate regime; the kuna was pegged to the Deutsche mark until 1999 (fixed until 1993) and subsequently to the euro. This means that, firstly, Croatia already has a clear candidate for the ERM II central rate, namely the rate it has used as a reference point for its managed floating regime. Moreover, it also means that Croatia's monetary policy space has been historically constrained and that adopting the euro should have a lower opportunity cost in terms of loss of independent monetary policy compared to countries with a flexible exchange rate regime. The peg also implies that, historically, nominal exchange rate movements could only to a very limited extent serve as an economic adjustment mechanism for real exchange rate misalignments. Holzner & Vidovic (2018) argue, for instance, that the length and depth of the Croatian recession was partially due to the nominal exchange rate overvaluation before the crisis and the associated current account deficits and elevated private sector debt levels.

### **Studies for Croatia mostly find a mild overvaluation in the post-crisis period**

This section discusses whether over the past two decades the Croatian exchange rate has been over- or undervalued relative to its equilibrium value. Such misalignments are generally assessed using the real effective exchange rate (REER), given its importance for the competitiveness of an economy. There are many different methods for assessing exchange rate misalignments. One of the main differences concerns the choice of the conceptual definition of the equilibrium rate. The most widely used theoretical concepts are (1) the Purchasing Power Parity (PPP) hypothesis, where the long-run equilibrium value of the exchange rate is equal to the domestic price level divided by the foreign price level, (2) the Fundamental Equilibrium Exchange rate (FEER), where the equilibrium exchange rate is defined as the exchange rate that brings about some form of macroeconomic equilibrium, very often the alignment of the current account with its equilibrium value, or (3) the Behavioral Equilibrium Exchange Rate (BEER) method, which relies on estimating a reduced form exchange rate model, where the exchange rate depends on short-run variables and fundamentals. The estimations also tend to differ depending on whether panel or time series methods are used and on other choices concerning the specific econometric techniques used. For a more detailed discussion of different methods see, for instance, Comunale (2018), Égert et al. (2005), Égert (2004)

**Table 1. Summary of the results of different studies and reports**

Report	Methodology	Results
IMF Article IV Reports	Methodology changed over time, currently three different models: FEER, BEER and an External Sustainability assessment Focus on real effective exchange rate (REER) Focus on Croatia	Pre-crisis: limited assessment, but overall largely in line with fundamentals Post-crisis: mild overvaluation around 2-3% Article IV 2017: broadly in line with fundamentals, even though slightly different results across three approaches
Comunale (2018)	FEER approach Focus on REER Focus on panel of CESEE countries	Pre-crisis: Strong overvaluation Post-crisis: Strong undervaluation (for 2016 around -15%)
Palic et al. (2015)	PEER approach (BEER variant) Focus on euro-kuna exchange rate Focus on Croatia	Over the period 1998 and 2014 they find various periods of mild over- and undervaluation, with a mild overvaluation in overall 45 out of 65 quarters
Svilokos & Tolic (2014)	BEER approach Focus on REER Focus on Croatia	Pre-crisis period: mild undervaluation Post-crisis period: mild overvaluation
Belullo and Broz (2007)	BEER approach Focus on REER Focus on Croatia	Pre-crisis period: close to equilibrium
Gligorov et al. (2017)	(Adjusted) PPP method	Overvaluation of around 16% in 2010, 13% in 2011 and 9% for the years 2012-2016.

Overall, comparing the assessment of exchange rate misalignments across studies using different methods is difficult. Moreover, in the case of Croatia, empirical evidence on equilibrium exchange rate misalignments is much scarcer than for most other CESEE countries. Table 1 summarizes the results of some recent papers and reports that include estimations for Croatia. The studies find overall different results, however most studies find either a mild or strong overvaluation of the Croatian exchange rate for most of the post-crisis period - only Comunale (2018) reports a strong undervaluation. Gligorov et al. (2017) find the strongest overvaluation of around 9% between 2012 and 2016 and even higher in the years before that, while most other studies find only a mild over- or undervaluation.

Given the differences in methodologies and periods we are only going to discuss the IMF's estimations in some detail. The IMF's methodology is the most comprehensive, as it includes three different approaches, which assess different aspects of exchange rate misalignments (Philipps et al., 2013). The framework includes two panel-regression-based methods, one FEER and one BEER approach, and an external sustainability analysis.

The IMF regularly reports some assessment of exchange rate misalignments in its Article IV reports. Pre-crisis, the Article IV reports only indicate that the IMF saw no drastic misalignments in the exchange rate. Since the financial crisis IMF evaluations have become more explicit and largely indicated that the real effective exchange rate was mildly overvalued by about 2-3%. According to the latest estimations by the IMF (2018) its models show somewhat mixed results owing to the different methods used: According to Phillips et al. (2013) the FEER/ current-account regression-based approach is "often but not always the most informative and reliable" of the three approaches. In the last assessment it yielded a slight undervaluation. It should be noted that the IMF FEER method, unlike other FEER methods such as Comunale (2018) includes a normative adjustment, which takes into account factors that according to the IMF cannot be

captured with an unadjusted FEER approach<sup>8</sup>. The IMF's other two approaches indicated a mild overvaluation of the REER. Overall, the IMF concludes that Croatia's exchange rate appears to be broadly in line with medium-term fundamentals (IMF, 2018).

### **Benefits of euro adoption assumed to outweigh costs**

As pointed out previously, the opportunity cost of introducing the euro is comparatively lower in Croatia than in a flexible exchange rate economy, given its historically restricted monetary policy. However, even if Croatia had not already adopted an exchange rate peg, it should be noted that theoretically as well as empirically the relationship between exchange rate regimes and misalignments in real exchange rates is still ambiguous. A substantial body of literature has argued that the adjustment mechanism via nominal exchange rates is important in the presence of sticky wages and prices and reduces the need for real adjustments. This is particularly the case in transition economies, which occasionally show a trend appreciation in real exchange rates. In this case, criteria of low inflation and stable nominal exchange rates such as in the European Monetary Union (EMU) can lead to costly real adjustments over time (see for instance Bulír & Šmídková (2005) for a discussion of CESEE EMU accession countries). According to this strand of the literature real exchange rate misalignments should be lower in flexible exchange rate regimes.

Holzner & Vidovic (2018) have in fact argued along similar lines for Croatia, stating that the nominal exchange rate rigidity was part of Croatia's problem during the financial crisis. Croatia was hit particularly hard by the financial crisis of 2007/8 compared to its CESEE peers. Its recession lasted six years and the unemployment rate increased to a peak of 17.5% during the crisis. Also, peer countries with similar initial drops in consumption of household, such as Romania and Hungary, recovered much faster than Croatia. Holzner & Vidovic (2018) argue that the length and depth of the Croatian recession was partially due to a nominal exchange rate overvaluation and the associated current account deficits and elevated private sector debt levels. Given the peg of the exchange rate and rigid wages and prices, a costly real adjustment took place.

However, another strand of the literature has presented empirical evidence pointing towards mechanisms for lower real misalignments in fixed exchange rate regimes. Two potential channels for lower misalignments are, firstly, that such regimes can increase price convergence through lower transaction costs and enhanced cross-border trade or, secondly, that they reduce destabilizing shocks if nominal exchange rates would be very volatile otherwise (see Fidora et al. (2017) for a discussion).

The Croatian government itself provided an assessment of potential benefits and costs of euro adoption in its euro adoption strategy, first published in autumn 2017 and adopted by the government in May 2018. According to the impact assessment, the costs are mostly small and temporary while the benefits are large and permanent. Hence, they conclude that the benefits of euro adoption outweigh the costs in the case of Croatia. In particular the elimination of Croatia's elevated currency risk stemming from the high euroization of the economy and financial sector would be an important benefit (see figure 1). According to the strategy, total debt in foreign currency including that indexed to foreign currency exceeds kuna 500bn (approximately 150% of GDP). More than 90% of that amount is linked to the euro.

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<sup>8</sup> In the case of Croatia, the IMF corrects, for instance, for the strong external deleveraging and stronger export than import growth after EU-accession, which cannot be sufficiently captured in the regressions.

**Figure 1. Cost-benefit analysis** (Source: Croatian central bank)

Table 1 Benefits of euro adoption

	Significance	Effect over time
Elimination of currency risk	Great	Permanent
Reduction of interest rates	Moderate	Permanent
Elimination of the risk of currency crisis and the reduction of the risk of banking and balance of payments crisis	Moderate	Permanent
Lower transaction costs	Small	Permanent
Stimulus to international trade and investments	Moderate	Permanent
Participation in the allocation of the Eurosystem's monetary income	Small	Permanent
Access to the euro area financial assistance mechanisms	Small	Permanent

Source: Strategy for the Adoption of the Euro in Croatia.

Table 2 Costs of euro adoption

	Significance	Effect over time
Loss of independent monetary policy	Small	Permanent
Risk of price increase as a result of conversion	Small	One-off
Risk of excessive capital inflows and accumulation of macroeconomic imbalances	Small	Permanent
Changeover costs	Small	One-off
Transfer of funds to the European Central Bank	Small	One-off
Participation in the provision of financial assistance to other member states	Moderate	One-off

Source: Strategy for the Adoption of the Euro in Croatia.

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