"Short-term foreign exchange forecasting: decision making based on expert polls"

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SHORT-TERM FOREIGN EXCHANGE FORECASTING: DECISION MAKING BASED ON EXPERT POLLS

Abstract

The paper aims to analyze the decision making based on expert polls for short-term foreign exchange (FX) forecasting from the viewpoint of the economic behavior theory. The paper offers the assessment of the problem of decision making for forecasting and investment into foreign currency. This study analyzes the relative accuracy of expert polls and forecasts, based on historical data, in the prediction of the most liquid currency pairs (EUR/USD, USD/JPY, GBP/USD) as well as USD/RUB currency pair on time horizons 1, 2, 6, and 12 months. Observation period lasted from January 2018 to January 2019. For EUR/USD (56-62 experts), the polls were more accurate than historical simulations. For GBP/USD (28-70 experts), historical simulations were more accurate than polls. For USD/JPY and USD/RUB, historical simulations are better earlier, while polls are slightly better later. The main conclusion is that EUR/USD historical modeling is usually less accurate on the horizon more than half a year as compared with expert polls for making the decisions about the future exchange rate.

INTRODUCTION

Many market participants are interested in being able to predict further exchange rate direction. Whether it is a large company or an individual, a currency forecast is significant for minimizing the risks and increasing the profits. The paper describes the expert polls for short-term currency forecasting.

Purchasing Power Parity (PPP) principle is based on the theoretical law of one price, according to which identical products in different countries should have the same price. For example, according to this rule, a pencil in Canada should cost as much as the same pencil in the United States, taking into account the exchange rate and excluding the costs of exchange and transportation.

Graefe (2018) proposed a structured approach to combining the forecasts based on various types of methods. His approach is correct in predicting the majority of possible political events.

This article intends to compare the accuracy of expert research and mathematical modeling for forecasting the currency exchange rates.

There are the papers about smoothing fluctuations in the accuracy of expert research and mathematical modeling, which is consistent with the professional opinion.

The problem is that in the unstable economic situation, the value of a structured approach to combining the forecasts is based on various types of methods.

In addition, researchers are very conservative about large changes and took into account all the accumulated knowledge of the situation. A structured approach to combining the forecasts from different methods using different strategies can be a solution to this problem. Many researchers find the relationship between the majority of possible political events and the economic assets in different countries.

1. LITERATURE REVIEW

The methodological basis of the analysis is the continuation of the theory of Multi-Criteria Decision Making (MCDM) and Analytical Hierarchy Processing (AHP). In particular, investors, advisors, are and society the main groups of actors contributing to this goal (Cooper & Priestly, 2009).

The decision making under uncertainty can be based on Multi-Criteria Decision Making (MCDM) in the best way (Buetzer, Habib, & Stracca, 2012).

It should also apply the methods for determining the investor's decision making (Buetzer, Habib, & Stracca, 2012).

The theory of Multi-Criteria Decision Making (MCDM) suggests that the optimal decision should positively depend on several group of decisions (Meynkhard, 2019; Backus & Crucini, 2000; Baumeister & Peersman, 2008).

What method is better to use for risk choice: expert polls or historical modeling? The last research findings regarding the reliability of expert surveys can give more accurate results for the forecast, which includes more information (Cooper & Priestly, 2009).

For example, in forecasting the political events, the expert judgment was used much earlier than mathematical models (Kernell, 2000; Silver, 2017). However, FX rate forecasters do not know much about the relative errors of expert surveys for different periods (Na. Morozko, Ni. Morozko, & Didenko, 2018a, 2018b).

Studies on the method of expert polls in various fields of application show that expert knowledge is really limited in forecasting under un-

certainty. Expert estimates of exchange rates are sometimes even less accurate than simple statistical models, for example, random walk models (Armstrong, 1980).

At the same time, expert assessments are useful and give good results if experts have their forecasting experience in various market situations (Green, Graefe, & Armstrong, 2011).

Forecasting the exchange rates does not always meet these requirements. It allows the analysts to learn about the errors of judgment and bias of individual experts (Singer, 2007; Farzanegan & Markwardt, 2009; Olomola & Adejumo, 2006).

Macroeconomic experts can use extensive mathematical, statistical approaches as well as empirical data. For example, many studies have shown that surveys tend to reduce the forecast accuracy when lengthening the forecast horizon (Graefe, 2018), and as the forecast date approaches, in the absence of strong shock fluctuations in the foreign exchange market, many surveys become more accurate. In the last century, the researchers proved it for many types of political events (Riker, 1982).

Forecasts are heavily influenced by structural factors as well as the state of the economy, cyclical correlation of market indicators, changes in the availability and attractiveness of currency pairs for speculators, the growth of algorithmic trading, the degree of intervention by regulators and the frequency of significant events (Graefe, Armstrong, Jones, & Cuzán, 2014). These factors can be included in the mathematical model. However, aggregated results are subject to different types of errors (Biemer, 2010; Groves & Lyberg, 2010).

Often the empirical error of expert polls far exceeds the sampling error (Armstrong, Green, & Graefe, 2015; Buchanan, 1986).

As an example, polls that were devoted to presidential elections in the United States for a week or even a month were the least accurate (Shirani-Mehr, Rothschild, Goel, & Gelman, 2018).

The study presents the empirical data for a reasonable answer to the question about the method of expert estimates, and the relative accuracy of the analysis of expert estimates based on the forecasts of EUR/USD, USD/JPY, GBP/USD and USD/RUB exchange rates for various short-term periods. Many researchers use the same method for oil price forecasting (An, Mikhaylov, Lopatin, Moiseev, Richter, Varyash, Dooyum, Oganov, & Bertelsen, 2019a; An, Mikhaylov, & Moiseev, 2019b; Denisova, 2019; Denisova, Mikhaylov, & Lopatin, 2019).

To assess the quality of the survey results, the following indicators were calculated: median, SmartEstimate (Thomson Reuters model), predicted surprise, average value, mode, standard deviation. This statistic is an objective assessment of expert opinions (Zubakin, Kosorukov, & Moiseev, 2015; Tryndina, Moiseev, Lopatin, Prosekov, & Kejun, 2020).

Over the past decades, macroeconomists have developed many quantitative models to predict the exchange rate. There is a huge number of methods based on the analysis of historical data that allows us to predict the behavior of a currency pair (Moiseev, 2017c; Moiseev & Akhmadeev, 2017).

However, such a large number is most likely related to the relatively equal effectiveness of each of the methods (Nyangarika, Mikhaylov, & Tang, 2018; Nyangarika, Mikhaylov, & Richter, 2019a, 2019b).

At the same time, they usually forget about expert polls as a reliable method of forecasting. However, this article will focus on comparing the method of expert polls with the mathematical method of forecasting the exchange rates (Lopatin, 2019a; Meynkhard, 2019).

In addition, several models are based on the effect of memory, when the current price is the basis for forecasting future prices (Mikhaylov, 2018a; Graefe, Kjchenhoff, Stierle, & Riedl, 2015).

2. METHODS

Expert judgment forecasts regarding the dynamics of currency pairs EUR/USD (Euro/US dollar), USD/JPY (US dollar/Yen), GBP/USD (British Pound/US dollar) and USD/RUB (US dollar/Russian ruble) from January 31, 2018 to January 31, 2019 were collected over time horizons of 1, 3, 6, 12 months from Thomson Reuters.

Thomson Reuters periodically interviews the representatives of investment banks and research centers relative to the target level of exchange rates. Ratings of all participants in these 16 separate polls are presented in Appendix.

The expert group consists of financial analysts and researchers. The composition of the participants in each poll varies. The number of private traders have ranged from 28 to 70 people. Some experts participated only in the polls regarding the dynamics of the EUR/USD pair; others participated in the polls on 4 four currency pairs.

The standard deviation of estimates is different and varies on average in the range from 2 to 7 percent. The average number of experts for another round of polls is 54 people.

Usually, when constructing an econometric model, values from economic theory are used (Dorofeyev, 2018). However, any variable that has a strong influence on the exchange rate can be added to the calculations. This econometric model is as follows:

$$\text{Rate}(1Y) = aX + bY + cZ + d.$$

Without going into details regarding the principles of constructing an equation, after obtaining the model, one can simply substitute the variables X, Y, Z and get the necessary forecast. The coefficients a, b and c determine how strongly each of the listed factors influences the exchange rate and the direction of movement (depending on whether the coefficient value is negative or positive), d – mean absolute error (see Appendix).

This work uses the materials from the Economic Forecasting Agency (EFA) from the official page www.longforecast.com. EFA specializes in long-

term financial market rates for corporate clients.

EFA uses the mathematical and statistical methods of prediction based on historical data, which take into account the following factors with varying level of import prices: cyclic recurrence, correlation of market indicators, changes in the availability and attractiveness of the instrument for speculators, electronic and algorithmic trading growth, regulatory intervention risk, and frequency of significant events over time like it was wrote before (Mikhaylov, 2018b; Mikhaylov, 2019).

3. RESULTS

The results of the forecast based on historical data were compared with empirical data. Then, the accuracy of the above model was compared with empirical indicators in the same way. As a result, a comparison was made of the average errors of these methods.

For many currency pairs and horizons, there were no expert polls of the study, so the number of respondents for each poll varies.

	1	2	3	4
■ Polls	0,011005907	0,020301427	0,026718199	0,034089649
■ Forecast	0,003233135	0,021854418	0,039489871	0,076086957

Figure 1. Mean absolute error of expert polls and forecasts EFA against the real rate EUR/USD (1, 3, 6 months and 1 year)

	1	2	3	4
■ Polls	0,014236326	0,026414862	0,035558894	0,044312401
■ Forecast	0,011573436	0,016270338	0,040264367	0,045708528

Figure 2. Mean absolute error of expert polls and forecasts EFA against the real rate USD/JPY (1, 3, 6 months and 1 year)

	1	2	3	4
■ Polls	0,018840021	0,035160043	0,04219891	0,050280411
■ Forecast	0,00610687	0,01127705	0,00690407	0,041930937

Figure 3. Mean absolute error of expert polls and forecasts EFA against the real rate GBP/USD (1, 3, 6 months and 1 year)

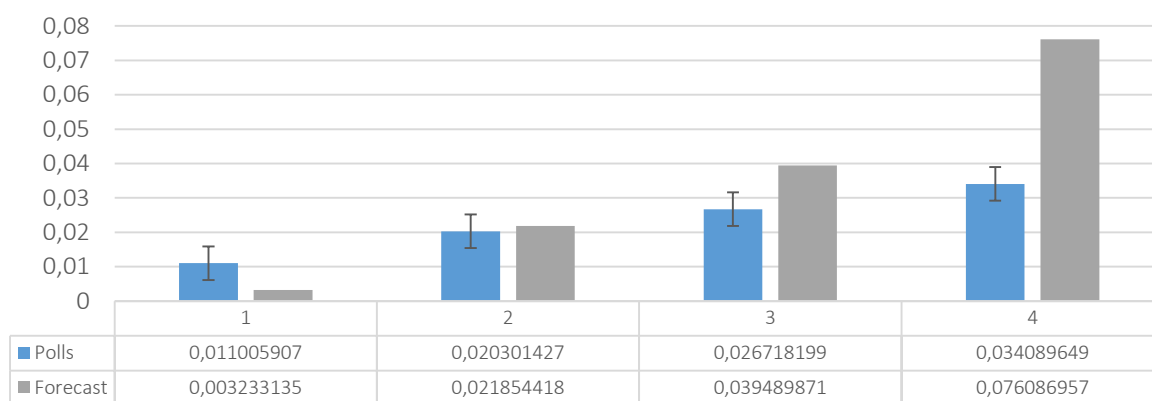|	1	2	3	4
■ Polls	0,022441707	0,038342335	0,092381311	0,068766784
■ Forecast	0,004216471	0,028353815	0,08741152	0,08527565
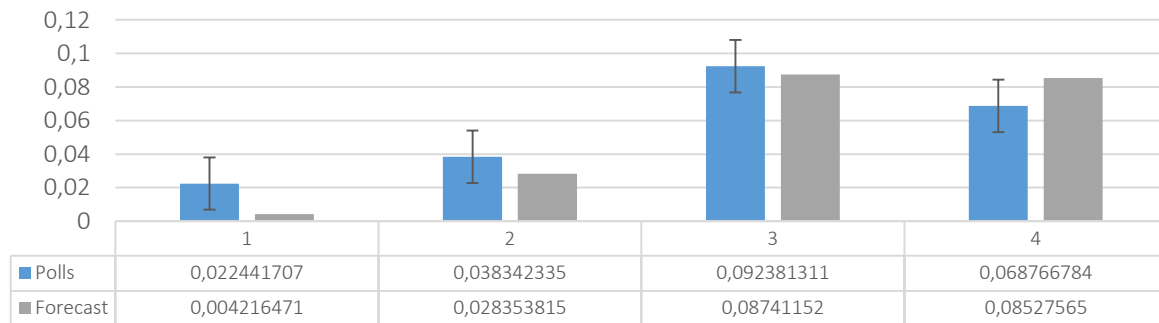
Figure 4. Mean absolute error of expert polls and forecasts EFA against the real rate RUB/USD (1, 3, 6 months and 1 year)

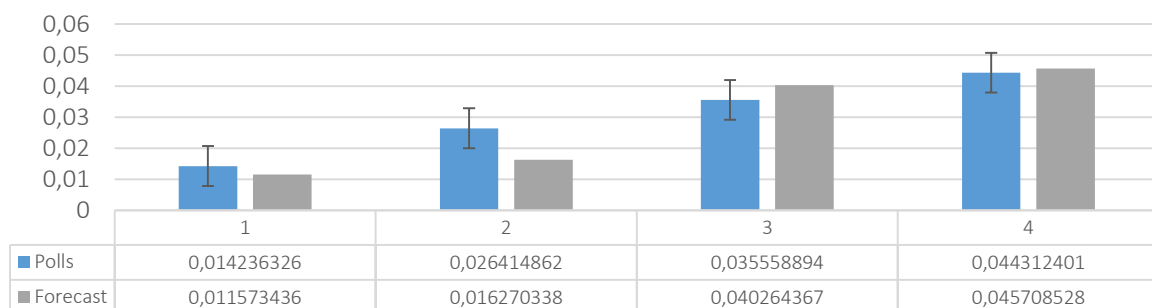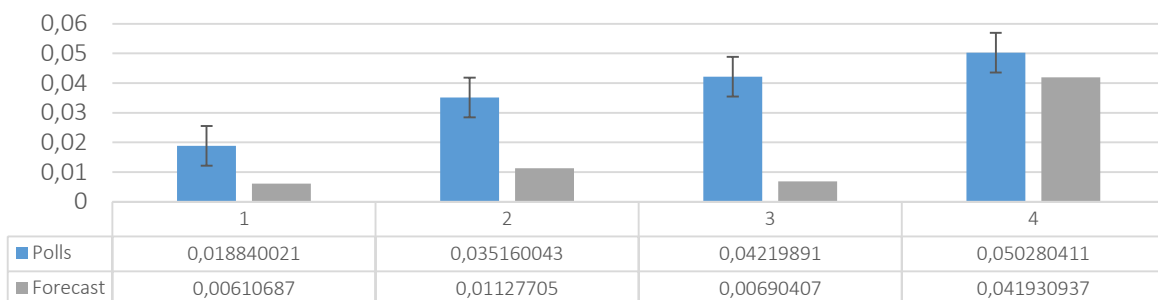Expert polls inaccuracy has been observed due to comparing the errors of experts on different time horizons. Figure 1 shows a comparison of the average absolute error (MAE) of forecasts obtained by the method of expert estimates and the method of mathematical modeling for EUR/USD over four time horizons.

The results were mixed for all four MAE currency pairs of expert forecast (in percent) for 1 month – from 1.1 to 2.2, for 3 months – from 2.0 to 3.8, for 6 months – from 2.6 to 9.2, for 12 months – from 3.4 to 6.9.

MAE mathematical model EFA for 1 month is from 0.3 to 1.15, for 3 months – from 1.1 to 2.8, for 6 months – from 3.9 to 8.7, for 12 months – from 4.2 to 8.5.

The method of expert estimates gives a higher accuracy when forecasting the exchange rates for a period of 1 year and more. This, of course, does not mean that mathematical models should be ignored when forecasting the exchange rates for a period of 1 year and more.

Attempting to find a better prediction method is usually not warranted. The reason for the inaccuracy of the application of the method of expert assessments is that it is necessary to form a circle of experts more purposefully and apply a ranking of expert evaluations depending on historical accuracy.

4. DISCUSSION

The analysis presented in this article is based on small selection of expert forecasts ($N = 28$ to 70), collected over 1-year period. Further research on various types of financial instruments will help to learn more about the relative accuracy of the method of expert estimates and the shortcomings of expert judgment in forecasting of the exchange rate (Slepov, Kosov, Burlachkov, Grishina, & Sakharov, 2019; Slepov, Burlachkov, Danko, Kosov, Volkov, Grishina, & Sekerin, 2017a; Slepov, Burlachkov, Danko, Kosov, Volkov, Ivolgina, & Sekerin, 2017b).

This study presents the evidence of the accuracy of expert judgment in predicting the exchange rates compared to historical modeling. The results suggest that experts lose the mathematical models on the horizon of up to 6 months inclusive. At the same time, they are ahead of mathematical modeling on the horizon of 1 year and presumably longer (Moiseev, 2017a; Moiseev, 2017b; Moiseev & Sorokin, 2018).

Combining the expert polls may reduce the expert method error. This is a topic for future research. Experts in any field should refrain from attention the specifics of the situation (Lopatin, 2019b; Meynkhard, 2020). In addition, they should be conservative about large changes and take into account all the accumulated knowledge of the situation (Armstrong et al., 2015). A structured approach to combining the forecasts from different methods using different strategies can be a solution to this problem.

CONCLUSION

The authors found out that EUR/USD historical modeling is usually less accurate on the horizon more than half a year as compared with expert polls for making the decisions about the future exchange rate.

This result proves the findings of several researchers (Sigarev, Kosov, Buzdalina, Alandarov, & Rykova, 2018; Osipov, Skryl, Blinova, Kosov, Zeldner, & Alekseev, 2017).

If one uses a simple mean, then the combined forecast will be more accurate than the average error of the individual forecast as it was found by Armstrong (2001). Experimental studies have shown the preferences of combined forecast like the researchers before (Larrick & Soll, 2006; Soll & Larrick, 2009). Secondly, it is extremely difficult in most practical situations to find out in advance which forecast will be more accurate because historical accuracy is not a guarantee of future accuracy. It proves the findings in the papers (Na. Morozko, Ni. Morozko, & Didenko, 2018c, 2018d).

The paper proved the studies, which found a negative relationship between the historical accuracy of expert polls (Graefe et al., 2018) and mathematical models (Graefe et al., 2015). The results showed that the average of the two forecasts is more accurate than a separate forecast if the error is less accurate than the forecast and does not exceed error more than in three times. As noted above, the results regarding the reliability of expert surveys can give more accurate results for the forecast, which includes more information. Therefore, in order to improve the accuracy of expert forecasts, we must look for information that these methods could miss.

ACKNOWLEDGMENT

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APPENDIX

FX POLLS								
REUTERS POLLS FOR FX	**EUR/USD**							
Download date	**February 6, 2019**							
Effective date	**1M**	**3M**	**6M**	**1Y**	**REE**			
Median	1.1500	1.1500	1.1700	1.2000				
SmartEstimate®	1.1441	1.1462	1.1659	1.2029				
Predicted surprise	−0.0059	−0.0038	−0.0041	0.0029				
Mean	1.1451	1.1486	1.1648	1.2018				
Mode	1.1500	1.1500	1.1700	1.2000				
Min	1.1200	1.0900	1.0800	1.1000				
Max	1.1800	1.2100	1.2200	1.3200				
Standard deviation	0.0128	0.0240	0.0324	0.0427				
Forward outright	1.1414	1.1474	1.1565	1.1755				
# Forecasters	56	70	69	65				
Real rate	1.144	1.169	1.219	1.242				
MAE polls	0.0126	0.0237	0.0326	0.0423	0.0110	0.0203	0.0267	0.0341
Longforecast.com	1.1370	1.1180	1.1230	1.0530				
MAE forecast	0.0037	0.0256	0.0482	0.0945	0.0032	0.0219	0.0395	0.0761
Contributor data								
Contributor	**1M**	**Rank**	**3M**	**Rank**	**6M**	**Rank**	**1Y**	**Rank**
ABN Amro Cap	1.1600	17	1.1700	17	1.2000	9	1.2500	–
ABN Amro UK	N/A	–	N/A	–	N/A	–	N/A	8
AIB	1.1500	–	1.1600	–	1.1700	–	1.1800	15
ANZ Bank	1.1200	–	1.0900	–	1.0900	–	1.1700	–
Alpha Bank	1.1500	–	1.1600	–	1.1800	–	1.2000	–
Aurel BGC	1.1400	7	1.1375	18	1.1500	16	1.1300	14
BBVA	1.1500	–	1.1500	–	1.1600	–	1.2100	12
BMO	N/A	–	1.1400	–	1.1500	–	1.1700	–
Banco BPI	N/A	–	N/A	–	N/A	–	N/A	17
Banco Santan	N/A	–	N/A	–	N/A	–	N/A	2
Barclays	N/A	–	N/A	–	N/A	13	N/A	–
BayernLB	N/A	–	1.1500	3	1.1700	2	1.2200	–
BofAML	1.1800	–	1.2100	–	1.2200	11	1.2500	19
CA CIB	1.1500	–	1.1600	–	1.2000	–	1.2400	–
CBA Ltd	N/A	–	N/A	–	N/A	19	N/A	–
CIBC	1.1500	–	1.1600	–	1.1800	–	1.2300	20
China Secs	1.1400	–	1.1400	–	1.1500	–	1.1700	–
Citigroup	N/A	–	1.1500	–	1.1700	–	1.2100	–
Commerzbank	1.1400	–	1.1500	11	1.1700	8	1.2300	–
Continuum Ec	1.1500	1	1.1400	4	1.1500	4	1.1700	16
Credit Suiss	N/A	–	1.1500	–	N/A	–	1.2000	–
DBS Bank	N/A	–	1.0900	–	1.0800	20	1.1000	–
DNB	1.1500	–	1.1500	–	1.1700	–	1.2000	–
DZ Bank	1.1500	18	1.1500	–	1.1500	–	1.1500	18
Danske Bank	1.1500	–	1.1700	15	1.2000	–	1.2500	–
DekaBank	N/A	–	1.1600	–	1.1900	15	1.2200	–
Desjardins G	1.1500	5	1.1500	–	1.1600	–	1.1900	–
Deutsche Ban	1.1400	19	1.1600	–	1.1700	–	1.2500	–
Generali Inv	N/A	–	1.1400	–	1.1600	–	1.2000	–
Goldman Sach	N/A	–	1.1700	–	1.2000	–	1.2000	–
HSBC Hldg	N/A	–	N/A	–	N/A	–	N/A	4
Handelsbanke	1.1400	–	1.1400	13	1.1600	3	1.2000	–
Helaba	1.1500	–	1.1500	9	1.2000	6	1.2500	6
ING Fin Mkts	1.1300	–	1.1200	–	1.1200	–	1.2000	–

India Forex	1.1425	–	1.1575	–	1.1750	–	1.1850	–
Informa Glob	1.1350	–	1.1000	–	1.1300	–	1.1500	–
Intesa Sanpa	1.1400	14	1.1400	7	1.1600	10	1.1700	11
Investec	1.1500	–	1.1700	–	1.2100	–	1.2400	3
JP Morgan	1.1500	–	1.1400	–	1.1600	–	N/A	–
Julius Baer	1.1200	–	1.1000	–	1.1100	–	1.1500	–
Jyske Bank	1.1500	–	1.1600	–	1.1500	–	1.1900	–
Krung Thai B	1.1200	–	1.1500	–	1.1700	–	1.1800	–
LBBW	1.1300	2	1.1300	8	1.1600	12	N/A	–
Landsbankinn	1.1600	6	1.1800	–	1.2000	–	1.2600	–
Lloyds Bank	1.1500	–	1.1700	–	1.1900	–	1.2300	10
MUFG	1.1500	3	1.1700	–	1.1900	–	1.2200	–
Maybank Inv	N/A	–	1.1400	–	1.1500	–	N/A	–
Mizuho Secs	1.1500	–	1.1600	–	1.1800	–	1.2200	–
Monex Europe	1.1500	–	1.1700	19	1.1800	–	1.2000	–
Morgan Stanl	1.1600	13	1.1800	5	1.2200	–	1.3200	–
NAB	1.1700	–	1.1800	–	1.1900	–	1.2400	–
NORD/LB	1.1500	–	1.1700	–	1.1800	14	1.2000	1
NatWest Mark	N/A	4	1.1500	–	1.1700	–	1.2200	–
Natixis	1.1480	12	1.1500	20	1.1600	–	1.2000	–
Natl Bk Cana	N/A	–	1.1600	–	1.2000	18	1.2200	7
Nomura	1.1700	–	1.2000	–	1.2100	–	1.3000	–
Nordea Bank	1.1467	–	1.1600	14	1.1833	–	1.2042	–
Nykredit Mar	N/A	–	1.1400	–	1.1600	–	1.2300	–
OCBC	1.1480	15	1.1480	2	1.1587	–	1.1800	–
PNC Finl Svc	1.1500	–	1.1700	–	1.1900	–	1.2300	–
Postbank	1.1369	–	1.1300	–	1.1500	–	1.2000	–
RBC	1.1200	9	1.1000	12	1.1000	–	1.1600	–
Rabobank	1.1400	8	1.1300	6	1.1200	7	1.1500	–
Raiffeisen I	1.1300	16	1.1400	–	1.1600	–	1.2200	–
SEB	1.1500	–	1.1500	–	1.1567	–	1.1800	–
Saxo Bank	1.1200	–	1.1000	–	1.0800	–	1.1200	–
Scotiabank	1.1700	–	1.1700	–	1.2200	–	1.3000	5
Societe Gene	1.1300	–	1.1400	–	1.1700	–	N/A	–
StanChart	N/A	–	1.1600	–	1.1700	–	1.2100	–
Swedbank	1.1400	–	1.1600	–	1.1800	–	1.2000	–
TD	1.1500	20	1.1700	–	1.1900	–	1.2000	–
TD Asset Mgm	N/A	–	N/A	–	N/A	–	N/A	9
UOB	1.1500	–	1.1500	–	1.1700	–	N/A	–
UniCredit	N/A	–	1.0900	–	1.0900	–	1.1400	–
Wells Fargo	1.1400	–	1.1400	16	1.1500	17	1.1900	–
Westpac	1.1300	10	1.1200	10	1.1100	5	1.1000	–
ZKB	1.1400	11	1.1400	1	1.1500	1	1.1700	13

FX POLLS

REUTERS POLLS FOR FX	USD/JPY				REE			
Download date	February 6, 2019							
Effective date	1M	3M	6M	1Y				
Median	109.35	110	110	107				
SmartEstimate®	109.35	110.07	110.01	107.08				
Predicted surprise	0	0.07	0.01	0.08				
Mean	109.56	110.3	109.92	107.48				
Mode	109	110	110	105				
Min	107	105	103	99				
Max	114.88	119.67	122.33	120				
Standard deviation	1.56	2.97	3.8	4.89				
Forward outright	109.57	109.01	108.18	106.43				
# Forecasters	49	62	61	56				

Real rate	108.87	111.86	106.67	109.17				
MAE polls	1.5499	2.9548	3.7931	4.8376	0.014	0.026	0.036	0.044
Longforecast.com	111.39	115.5	115.26	119.15				
MAE forecast	1.2600	1.8200	4.2950	4.9900	0.012	0.016	0.04	0.046

Contributor data								
Contributor	**1M**	**Rank**	**3M**	**Rank**	**6M**	**Rank**	**1Y**	**Rank**
ABN Amro Cap	111	–	110	4	110	–	105	–
ABN Amro UK	N/A	–	N/A	–	N/A	–	N/A	20
AIB	109	12	109	–	109	–	109	–
ANZ Bank	110	–	109	–	106	–	99	–
Alpha Bank	107.5	11	108	–	110	–	112	–
Aurel BGC	108	2	109	16	111	–	110	–
BBVA	111	–	113	15	114	–	112	–
BMO	N/A	13	109	–	109.33	–	110	–
BayernLB	N/A	–	113	6	112	–	108	–
BofAML	107.27	–	106.33	–	105.65	–	102.36	15
CA CIB	111	–	113	–	111	–	107	1
CBA Ltd	N/A	–	N/A	–	N/A	17	N/A	–
CIBC	108	–	107	1	106	11	105	9
Citigroup	N/A	–	107.33	–	105	–	100.33	19
Commerzbank	110.5	–	110.67	–	109	13	103.33	–
Continuum Ec	108	17	109	–	109	–	107	–
Credit Suiss	N/A	–	112	–	N/A	–	105	3
DBS Bank	N/A	–	116.67	–	117.67	–	115.67	–
DNB	109	–	110	–	110	–	108	5
DZ Bank	109	–	110	–	112	8	112	16
Danske Bank	109	–	110	–	110	–	112	–
DekaBank	N/A	–	110	–	111	15	112	–
Desjardins G	110	1	110	10	111	20	113	–
Deutsche Ban	108	–	106	–	104	–	100	–
Eurobnk Erga	N/A	9	N/A	–	N/A	–	N/A	6
Generali Inv	N/A	–	109	–	108	–	105	–
Goldman Sach	N/A	–	108	–	107	14	105	–
Handelsbanke	107.67	–	105.33	–	103	–	100	–
Helaba	109	–	109	–	107	1	106	8
IFR Markets	N/A	–	N/A	–	N/A	19	N/A	12
ING Fin Mkts	110	–	113	–	110	–	100	–
Informa Glob	110	6	117	2	113	16	111	–
Intesa Sanpa	109	–	110	7	111	–	114	–
Investec	111	–	111	–	109	–	108	–
JP Morgan	110.45	–	113	–	114	6	N/A	–
Julius Baer	111	–	113	–	113	–	115	–
Jyske Bank	108.86	–	108	–	107.33	–	102	–
LBBW	114.88	–	119.67	–	119.06	–	N/A	–
Landsbankinn	110	–	112	–	114	–	119	–
Lloyds Bank	109.5	–	109.33	–	107.33	7	105.67	11
MUFG	108	5	107	–	106	–	104	–
MUFG Bank	N/A	–	N/A	–	N/A	9	N/A	17
Maybank Inv	N/A	–	109.33	–	107.33	–	N/A	–
Mizuho Secs	108	–	107	–	104	–	100	–
Monex Europe	107	–	105	19	106	–	103	–
Morgan Stanl	109.26	–	107.98	–	105.3	–	101.29	–
NAB	112	16	113	17	112	–	107	–
NORD/LB	107	–	110	9	115	2	105	7
NatWest Mark	N/A	–	115	–	115	–	110	–
Natixis	109.05	8	109	–	108	–	106	–
Natl Bk Cana	N/A	18	112	–	114.33	3	112.67	4

Nomura	114	–	119.33	–	122.33	–	N/A	–
Nordea Bank	109.78	–	110	5	112.67	–	115.75	–
OCBC	N/A	4	N/A	12	N/A	–	N/A	–
PNC Finl Svc	108.6	–	108.4	–	108	–	108.2	–
RBC	111	19	113	14	116	–	120	–
Rabobank	109	3	108	18	106	12	105	10
SEB	110	20	108.66	11	107.33	–	104	–
Scotiabank	110	–	110	–	110	5	108	–
Societe Gene	109.35	–	108.67	–	107.33	–	N/A	–
St George Ba	N/A	–	N/A	13	N/A	–	N/A	13
StanChart	N/A	10	109.33	3	107.33	4	105	–
Swedbank	109	–	110	20	110	–	107	2
TD	110	–	109	8	107	–	105	–
TD Asset Mgm	N/A	–	N/A	–	N/A	–	N/A	14
UOB	111	15	113.33	–	114.33	–	N/A	–
UniCredit	N/A	–	111	–	109	–	106	–
Wells Fargo	109	–	109	–	108	10	106	18
Westpac	109.87	14	110.33	–	111.67	–	111.67	–

FX POLLS

REUTERS POLLS FOR FX	GBP/USD				REE			
Download date	February 6, 2019							
Effective date	1M	3M	6M	1Y				
Median	1.31	1.32	1.35	1.4				
SmartEstimate®	1.304	1.3179	1.3515	1.3949				
Predicted surprise	-0.006	-0.0021	0.0015	-0.0051				
Mean	1.3029	1.3236	1.3487	1.3947				
Mode	1.31	1.32	1.32	1.4				
Min	1.24	1.21	1.21	1.25				
Max	1.35	1.46	1.48	1.59				
Standard deviation	0.0252	0.0469	0.059	0.0727				
Forward outright	1.2967	1.3008	1.3066	1.3183				
# Forecasters	44	57	56	52				
Real rate	1.31	1.3124	1.376	1.419				
MAE polls	0.0247	0.0461	0.0581	0.0713	0.019	0.035	0.042	0.05
Longforecast.com	1.326	1.342	1.395	1.3				
MAE forecast	0.0080	0.0148	0.0095	0.0595	0.006	0.011	0.007	0.042

Contributor data

Contributor	1M	Rank	3M	Rank	6M	Rank	1Y	Rank
ABN Amro Cap	1.34	–	1.36	–	1.38	–	1.45	–
ABN Amro UK	N/A	–	N/A	7	N/A	–	N/A	11
AIB	1.31	7	1.32	8	1.34	–	1.37	–
ANZ Bank	1.24	–	1.21	16	1.21	–	1.27	–
Alpha Bank	1.29	19	1.28	–	1.32	–	1.35	–
Aurel BGC	1.24	–	1.25	–	1.25	18	1.27	–
BBVA	1.32	–	1.36	–	1.39	–	1.42	–
BMO	N/A	13	1.32	–	1.33	–	1.31	–
BNP Paribas	N/A	18	N/A	13	N/A	–	N/A	–
Barclays Ban	N/A	4	N/A	2	N/A	2	N/A	12
BofAML	1.34	–	1.39	–	1.42	–	1.45	6
CA CIB	1.31	15	1.32	–	1.38	–	1.43	–
CBA Ltd	N/A	20	N/A	–	N/A	–	N/A	–
CIBC	1.31	–	1.33	9	1.37	–	1.44	–
Citigroup	N/A	–	1.31	–	1.33	–	1.37	14
Commerzbank	N/A	–	N/A	14	N/A	14	N/A	–
Continuum Ec	1.34	–	1.31	–	1.31	17	1.33	4
Credit Suiss	N/A	–	1.33	–	N/A	–	1.4	–
DNB	1.28	–	1.28	–	1.36	–	1.36	17
DZ Bank	1.3	16	1.26	20	1.26	1	1.29	9

Danske Bank	1.28	–	1.39	–	1.45	–	1.51	–
DekaBank	N/A	–	1.32	–	1.38	–	1.44	–
Desjardins G	1.3	–	1.3	–	1.31	–	1.35	–
Deutsche Ban	N/A	–	1.4	–	1.47	–	1.49	–
Eurobnk Erga	N/A	9	N/A	–	N/A	–	N/A	–
Generali Inv	N/A	–	1.31	–	1.36	–	1.43	–
Goldman Sach	N/A	–	1.38	–	1.41	–	1.41	15
Handelsbanke	N/A	–	N/A	–	N/A	5	N/A	3
Helaba	1.32	–	1.35	–	1.41	20	1.56	–
IHS Global	N/A	14	N/A	–	N/A	–	N/A	–
ING Fin Mkts	1.26	–	1.29	–	1.32	–	1.41	–
Informa Glob	1.3	–	1.32	–	1.4	13	1.47	8
Intesa Sanpa	1.25	–	1.27	–	1.29	–	1.3	–
Investec	1.31	2	1.34	4	1.38	11	1.4	–
JP Morgan	1.31	–	1.3	–	1.31	–	N/A	–
Julius Baer	1.29	–	1.28	–	1.3	–	1.37	–
Jyske Bank	1.32	–	1.32	–	1.32	7	1.38	–
LBBW	1.32	5	1.33	12	1.36	–	N/A	19
Landsbankinn	1.3	3	1.31	15	1.35	–	1.42	13
Lloyds Bank	1.32	12	1.35	5	1.35	6	1.33	–
MUFG	1.307	–	1.3605	–	1.3918	–	1.435	–
MUFG Bank	N/A	10	N/A	3	N/A	8	N/A	–
Maybank Inv	N/A	–	1.31	–	1.33	–	N/A	–
Mizuho Secs	1.3	17	1.29	17	1.29	–	1.36	–
Monex Europe	1.32	–	1.34	19	1.38	–	1.4	–
Morgan Stanl	1.33	–	1.36	10	1.42	12	1.51	2
NAB	1.35	–	1.38	–	1.41	–	1.46	–
NORD/LB	1.32	–	1.3	–	1.24	–	1.33	–
NWM Plc	N/A	–	N/A	–	N/A	–	N/A	7
NatWest Mark	N/A	–	1.36	11	1.37	–	1.39	–
Natixis	1.312	–	1.32	–	1.32	–	1.35	–
Natl Bk Cana	N/A	–	1.33	–	1.33	–	1.28	–
Nomura	N/A	–	1.46	–	1.48	–	1.59	–
Nordea Bank	1.3033	6	1.27	–	1.3383	–	1.3858	–
OCBC	N/A	–	N/A	1	N/A	19	N/A	16
OP Yrityspan	N/A	–	N/A	–	N/A	10	N/A	–
PNC Finl Svc	1.31	–	1.45	–	1.45	–	1.5	–
RBC	1.28	–	1.24	–	1.22	–	1.25	–
Rabobank	1.31	–	1.32	–	1.32	16	1.35	–
SEB	1.2637	–	1.3326	–	1.3662	–	1.4217	5
Saxo Bank	N/A	–	N/A	–	N/A	3	N/A	1
Scotiabank	1.32	–	1.32	–	1.35	9	1.4	10
Societe Gene	1.28	11	1.27	–	1.31	4	N/A	20
St George Ba	N/A	1	N/A	6	N/A	–	N/A	–
StanChart	N/A	–	1.37	–	1.39	–	1.43	–
Swedbank	1.31	–	1.36	–	1.42	–	1.46	–
TD	1.32	–	1.32	–	1.33	–	1.34	–
TD Asset Mgm	N/A	–	N/A	18	N/A	–	N/A	–
UOB	1.28	–	1.25	–	1.25	–	N/A	–
UniCredit	N/A	–	1.34	–	1.36	–	1.4	–
Wells Fargo	1.31	–	1.3	–	1.32	15	1.34	18
ZKB	1.3	8	1.3	–	1.32	–	1.36	–

FX POLLS								
REUTERS POLLS FOR FX	**USD/RUB**				**REE**			
Download date	**February 6, 2019**							
Effective date	**1M**	**3M**	**6M**	**1Y**				
Median	65.875	65.795	66.4	66				
SmartEstimate®	66.245	66.535	66.234	65.292				
Predicted surprise	0.3702	0.7398	−0.1656	−0.708				

Mean	66.148	66.145	66.253	65.818				
Mode	66	64	63	62				
Min	64	62	62	60.83				
Max	71.79	72.67	73.8	75.1				
Standard deviation	1.5119	2.3871	2.8094	3.5957				
Forward outright	65.966	66.504	67.302	68.938				
# Forecasters	28	34	33	31				
Real rate	65.339	62.496	56.34	56.187				
MAE polls	1.4663	2.3962	5.2048	3.8638	0.022	0.038	0.092	0.069
Longforecast.com	65.89	66.04	66.19	65.77				
MAE forecast	0.2755	1.7720	4.9248	4.7914	0.004	0.028	0.087	0.085

Contributor data								
Contributor	**1M**	**Rank**	**3M**	**Rank**	**6M**	**Rank**	**1Y**	**Rank**
ACRA	65.7	6	65.5	6	63	–	62	–
ANZ Bank	66	–	65	–	65	–	65.5	–
BNP Paribas	N/A	1	N/A	3	N/A	3	N/A	–
Bank GPB	N/A	5	N/A	7	N/A	–	N/A	–
BofAML	64.66	–	62	–	62	–	62	4
CA CIB	67.3	–	68	–	67.7	–	65	–
Citi	N/A	3	67.1	2	65.93	–	66.13	–
Commerzbank	N/A	–	N/A	–	N/A	6	N/A	–
Continuum	64	–	63.5	–	63	8	62	3
Credit Suiss	N/A	–	64	–	N/A	–	62	5
DZ Bank	65	–	66.09	5	65.22	–	65.22	–
Danske Bank	69.1	–	72	–	73.8	–	75.1	–
Finometrica	65.75	–	66.59	–	67.22	–	67.79	–
Goldman Sach	N/A	–	64	–	63	–	62	–
IFR Markets	N/A	–	N/A	–	N/A	10	N/A	6
ING Fin Mkts	65	–	64	–	65.5	–	64.5	–
Informa Glob	65.5	4	68	8	69	–	66	–
JP Morgan	67	7	68.33	–	67.83	–	N/A	–
Julius Baer	67.6	–	70	4	70.2	1	71	1
Lloyds Bank	64.75	–	62.83	–	62.17	–	60.83	7
MUFG	65.5	–	66.5	–	66.7	–	66.2	–
Monex Europe	66	–	64	–	63	–	62	–
Morgan Stanl	65.47	–	64.66	9	63.65	–	61.65	9
NatWest Mkts	N/A	9	64.67	–	63.67	–	61.67	–
Natixis	65.427	10	65	–	64	–	63	–
Nomura	66.12	–	67	–	68.13	4	N/A	–
Nordea Bank	67	2	68	1	69	2	69.5	–
Promsvyazban	65.6	–	63.8	–	67.8	–	70.3	–
Rabobank	65	–	65	–	65	–	70	–
Raiffeisen I	71.79	–	72.67	–	71.67	–	70.33	–
Reel Kapital	N/A	–	N/A	–	N/A	–	N/A	10
Rosbank	66.2	–	65.5	–	66.4	–	67.5	–
SEB	66	–	66.333	–	67.167	–	67.5	2
Saxo Bank	N/A	–	N/A	–	N/A	9	N/A	–
Sberbank CIB	67	–	67	–	67	–	67	–
Soc Gen	65.66	–	65.17	–	64.5	5	N/A	–
StanChart	N/A	–	64.33	–	63.83	–	63	–
Swedbank	66.02	8	68.1	–	69.2	–	66.5	–
UniCredit	N/A	–	67.5	–	68.3	–	70.9	–
VTB-Capital	N/A	–	N/A	–	N/A	7	N/A	8
Wells Fargo	66	–	66.75	10	66.75	–	66.25	–