При анализе основных биржевых фондов США можно заметить, что цена их акций значительно более низкая по сравнению с портфелями, которые можно сформировать самостоятельно. Так, наиболее популярный фонд, основанный на индексе SP500, SPDR S&P 500 ETF (SPY), торгуется в 10 раз ниже, чем индекс, при цене индекса SP500 в 3940 долларов акции фонда будут торговаться на уровне около 394 долларов.

Обилие разнонаправленных биржевых фондов, торгуемых на рынке ценных бумаг США, позволяет достичь высокой степени диверсификации инвестиционного портфеля даже в случае его незначительного объема. В действительности недостаток диверсификации инвестиций розничных инвесторов имеет широкое представление в научной литературе. Большинство индивидуальных инвесторов и домашних хозяйств обычно владеют лишь несколькими акциями в своих портфелях. Отсутствие диверсификации отрицательно сказывается на финансовом благополучии, степень инвестиционной грамотности инвесторов определяет уровень диверсификации их портфелей. Хотя транзакционные издержки традиционно упоминаются как одна из основных причин отсутствия диверсификации, это объяснение больше не актуально с появлением ETF и индексных фондов, которые позволили резко сократить комиссии и необходимость самостоятельной ребалансировки индексов.

Действительно, согласно исследованию J.P. Morgan, в числе наиболее важных критериев привлекательности инвестиций в биржевые фонды указываются (в порядке важности): низкие транзакционные издержки, простота торговли и ликвидность, диверсификация и риск-менеджмент, прозрачность, налоговые льготы и др.

Таким образом, биржевые фонды выступают важным инструментом снижения входных барьеров для розничных инвесторов, предоставляя возможности значительной диверсификации с низкими издержками. Подобные инструменты позволяют выровнять кривую доходности и снизить риск в долгосрочной перспективе при меньших издержках, нежели в случае доверительного управления.

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FORECASTING EXCHANGE RATE SERIES USING BOX-JENKINS METHODOLOGY

The purpose of this paper is to apply ARIMA method for forecasting currency exchange rates against the dominant currency such as USD, by using their historical exchange rates. Exchange rate is the currency rate of particular country expressed in form of the currency of another country. This system is fixed by the foreign exchange market over supply and demand for that particular currency in relation to the other currencies. In this framework, while being aware of the limitation of linearity assumption for ARIMA technique, we want to forecast United State dollar/Turkish lira rate between the years of 2019 and 2020 by using 116 observations. It's clear in the data that the exchange rate throughout the years shows that there has happen significant changes. This problem may create a question such as: how can one predict the currency exchange rates' future fluctuations? In this regard, we refer to

the techniques of forecasting the dynamics of exchange rates. Several methods were applied in order to forecast and then compared with the ARIMA model. Forecasts in exchange rates are important for all sectors of the international economic relations. There are lot of works exist on time series based forecastig modeling of foreign currency rates in literature. Most of authors try to create and test the Autoregressive Integrated Moving Average (ARIMA) model to forecast exchange rates. Daily and in some works monthly exchange rates were used as the variable output in the articles. These studies remark that the ARIMA model is more accurate model to forecast the exchange rate. Box and Jenkins' ARIMA technique has been oftenly used as a standard for forecasting and for estimation of the new approaches and probably it one of the most important tools in the time series forecasting.

According to Waeto, Chuarkham and Intarasit (2017), the Autoregressive (AR), Moving Average (MA), Autoregressive Moving Average (ARMA) and the Autoregressive Integrated Moving Average (ARIMA) models which are known as the Box-Jenkins models. Chatfield (1996), Zhang (2007) and Zhang (2003) concur that the best and proper time series model is acceptable by regarding the principles in order to come up with forecasting results. The principles states that the best model is one that includes the smallest possible number of parameters, Chatfield (1996), because it tend to show a representation which is fairly adequate for the time series data. Adhikari and Agrawal (2009) argue that the principle is closely related to the Occam's razor principle as postulated in Mcleod and Hipel (1994) which thought that, a simple model is the one that shows adequate explanation. According to Adhikari and Agrawal (2009) a complicated model has more tendencies of diverting from the model's actual assumptions. The more the parameters of a model the higher is the risk of over fitting the model (Adhikari & Agrawal, 2009). A time series model that is over fitted tends to present the data well at the expense of failing to suitably make future predictions, according to Adhikari and Agrawal (2009).

The most important purpose of this research is to determine the appropriate model of forcasting of the time-series data which was taken from Turkish Statistical Institute (TUİK) which represents quarterly selling foreign exchange rate TRY/USD. We could see here the data of monthly exchange rate of TRY/USD from the beginning of 1990 till the end of 2018, total 116 observations, in which the highest value of foreign exchange rate TRY/USD is in 2019 Q4 (5,79) and the lowest is in 1990 Q1 (0,002386). Before doing any diagnostic tests we have to check the way how the variable looks by plotting the variable on the fig. 1. Thus the graphical presentation of the variable help determine the nature of the variable.

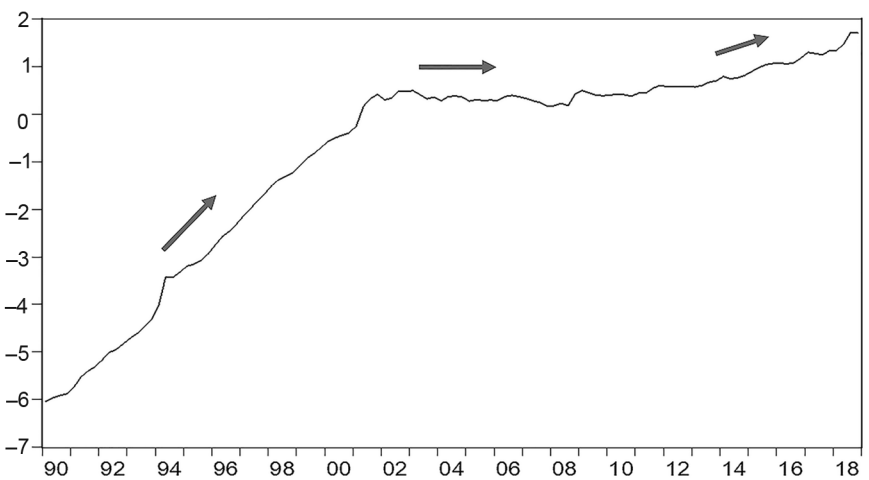


Figure 1

From the graphical presentation we can observe if the variable is stationary or non-stationary. It's clear that the exchange rate shows the three significant changes throughout the time. The rate constantly increasing till the year of 2002, however after the remaining not significant change in the duration of the 7 years, the exchange rate starts again its gradual increasing until the year of 2018.

In this paper the graph above shows that the graph does not start from zero on its horizontal axis, therefore when running this variable on Eviews a constant term has to be included. The lira's exchange rate against the US dollar will be checked for unit root by ADF and Phillips Perron unit root test run with the inclusion of intercept and a trend.

At the beginning of the paper, in order to test for unit root, we have to use Augmented Dickey-Fuller test. It must be noted that the Null hypothesis (H0) states that: The variable has a unit root and the Alternative hypothesis (H1) states that: The variable has no unit root. This paper shows the results of exchange rate after run on Eviews at level and first difference. At level the variables shows that they have no unit root because their probability values are above 1 %, and 5 % level of significant. At first difference the variable has unit root because their p-values are significant at 1 %, and 5 % level of significant with the Difference Stationary-Process which states that if a variable has unit root it is stationary at first difference.

Table1 — Results of the ADF and Phillips-Perron unit root tests

Test	T-statistic			Prob*
	1 %	5 %	10 %	
ADF (level)	–4.040532	–3.449716	–3.150127	0.5620
ADF (first level)	–3.488585	–2.886959	–2.580402	0.0000
Phillips Peron (level)	–4.039797	–3.449365	–3.149922	0.6226
Phillips Peron (first level)	–3.488585	–2.886959	–2.580402	0.0000

In order to verify the unit root results produced by ADF in this paper we are using a Phillips-Perron unit root test. H0 states that the variable has a unit root while H1 states that the variable has no unit root. It must be noted that the Null hypothesis (H0) states that: The variable has a unit root and the Alternative hypothesis (H1) states that: The variable has no unit root. This paper shows the results of exchange rate after run on Eviews at level and first difference. At level the variables shows that they have no unit root because their probability values are above 1 % and 5 % level of significant. At first difference the variables has unit root because their p-values are significant at 1 %, and 5 % level of significant with the Difference Stationary-Process which states that if a variable has unit root it is stationary at first difference.

Under the ACF, PACF function and the correlogram, it is essential to know that H0 states that the variable is stationary and H1 states that the variable is non-stationary. The sample correlogram and the ACF and PACF function is the most essential part in this analysis, as it helps to determines the proper ARIMA model to use for forecasting.

Table 2 — Testing Model. Correlogram results

Lags	ACF	PACF	Q-stat	Prob.
1	2	3	4	5
1	0.412	0.412	20.022	0.000
2	0.257	0.105	27.857	0.000
3	0.252	0.139	35.491	0.000
4	0.210	0.062	40.842	0.000
5	0.309	0.209	52.503	0.000

The end of the table 2

1	2	3	4	5
6	0.300	0.106	63.580	0.000
7	0.297	0.120	74.593	0.000
8	0.325	0.134	87.900	0.000
9	0.238	0.007	95.064	0.000
10	0.240	0.053	102.43	0.000
11	0.285	0.095	112.91	0.000
12	0.339	0.147	127.90	0.000
13	0.257	–0.030	136.63	0.000
14	0.217	0.001	142.91	0.000
15	0.192	–0.025	147.86	0.000
16	0.169	–0.037	151.72	0.000
17	0.123	–0.110	153.78	0.000
18	0.181	0.021	158.32	0.000
19	0.155	–0.067	161.71	0.000
20	0.218	0.066	168.42	0.000

Table 2 above shows all the results of the ACF, PACF and the probability obtained from the sample correlogram of all variables at level and at first difference. At level the probability values of variables is zero hence reject the null hypothesis and accept alternative hypothesis which says that the variable is non-stationary. Secondly the values of ACF and PACF are too large, the spikes of the ACF and the PACF are large overlapping the 95 % confidence interval dotted lines indicating that the variable is non-stationary otherwise the spikes should be confined within the 95 % confidence dotted lines for the variable to be stationary.

This paper provides that at first difference all variables have become stationary. The probability values are now greater than 5 % hence accept H0 which states that, the variable is stationary. The values of the ACF and PACF are now relatively smaller and the spikes of the correlogram are confined within the 95 % confidence interval dotted lines hovering around zero. The values are within the confidence range, but we see that the initial values exceed the confidence range, so it is estimated as AR (1) and MA (1).

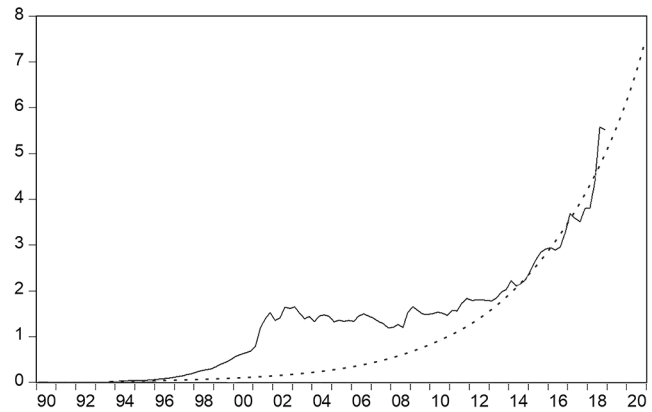
Identification is simply observing the behavior of the ACF, PACF and the sample correlogram to see which model to use. Sample correlogram of TRY/USD is used because it is the one that is stationary. Non-stationary variable cannot be used to find the ARIMA model because it has shocks and shocks never die, thus it's not fit for forecasting purposes.

Table 3 — Estimation variable and selecting model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.045124	0.049410	0.913248	0.3631
AR(1)	0.972351	0.027315	35.59826	0.0000
MA(1)	–0.860206	0.061320	–14.02823	0.0000

It's obvious that the probability of AR (1) is lower than 5 % makes this value significant. The same thing applies to MA (1). Absolute values of the coefficients AR (1) and MA (1), lower than 1, shows that the conditions of stability and transformation are also satisfied.

The essence of using ARIMA model is basically to forecast future values of the time series variable such as exchange rate in this case. The idea behind the model is to make use of past values to predict the future and by so doing the series speak for itself. This is the best method of forecasting time series variable. Diagnostic tests have also been applied after selecting the best ARIMA to make sure that there is no other information that has been left out.



Graph 2

The graph illustrates a gradual increasing tendency in the exchange rate between the years 2019 and 2020, the-quarter forecast rate is noted as follows:

Table 4 — TRY/USD foreign exchange rate

Date	Forecast	Actual
2019Q1	5,25	5,36
2019Q2	5,51	5,87
2019Q3	5,78	5,67
2019Q4	6,06	5,79
2020Q1	6,36	6,01

This paper recommend banks, investors, foreign exchange brokers and other participants in the Foreign Exchange Market of Turkey to make use of ARIMA(1,1,1) for forecasting exchange rate in order to be profitable. The ARIMA model with the least forecasting performance results is the one that is the best model since it indicates that it has the minimum possible error in both size and direction. In addition to that, this paper concurs that ACF and PACF are the best functions that can be used for model identification which helps in coming up with tentative models that can be estimated to find the best model. ACF and PACF are also used at stage three of Box-Jenkins methodology of diagnostic testing. After running the residual diagnostic tests correlogram and the residual squared diagnostic test correlogram the ACF and PACF values are checked to see if they are flat and within the error bound. Therefore, this paper concludes that ACF and PACF plays a major role in coming up with the best ARIMA model otherwise a proper model cannot be obtained.

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ПУТИ ФОРМИРОВАНИЯ ИСЛАМСКИХ ФИНАНСОВЫХ ИНСТИТУТОВ В АЗЕРБАЙДЖАНЕ

Развитие такой важной отрасли, как исламские финансы, представляет собой одно из многочисленных направлений совершенствования банковской системы, поскольку способствует активному возникновению все новых финансовых инструментов, увеличению конкуренции, как правило, более эффективному распределению капитала в экономике.

Следовательно, не вызывает удивления тот факт, что в течение последних десяти лет исламские финансы как особое направление банковской системы получили развитие в ряде государств. Итак, отрасль исламских финансов — одна из самых быстрорастущих в мире: за последние десять лет годовые темпы роста активов составляют 15–20 %. Исламские финансовые институты в условиях современного мира распространены повсеместно и находятся более чем в 110 государствах. Сегодня в мире осуществляют свою деятельность более 1100 исламских финансовых институтов, активы которых превышают 2,1 трлн дол. США. Следует отметить, что в целом исламский банкинг в государствах СНГ не смог получить большого развития, что объясняется, с одной стороны, исторически сложившимися предпочтениями экономических агентов, а с другой — невысокой степенью осведомленности клиентов, банкиров и органов государственной власти об исламской финансовой системе. Одна из причин, препятствующих развитию исламских банков в СНГ, заключается в несоответствии норм исламского банкинга национальному законодательству.

В то же время такие страны СНГ, как Азербайджан, Киргизия, Казахстан, Таджикистан, Туркменистан, Узбекистан, являются членами Исламского банка развития. Российская Федерация с 2005 г. исполняет роль независимого наблюдателя Организации исламского сотрудничества, а это в достаточной степени способствует экономической интеграции мусульманских стран с РФ, а также регулированию российскими инвесторами партнерских отношений в азиатском регионе.

17 января в Баку правительство Азербайджана и Исламский банк развития (ИБР) подписали грантовое соглашение, предусматривающее предоставление технической помощи в целях подготовки законодательной базы, касающейся исламского финансирования. Соглашение ставит целью исследование банковского законодательства и анализ возможностей внедрения в Азербайджане основных норм исламского банкинга. Однако вполне вероятно, что уже в скором времени будет проводиться работа по его организации. В связи с этим Азербайджану готов предложить помощь Исламский банк развития, который обязался финансировать услуги консультантов. Безусловно, законодательное регулирование исламского финансирования создаст новые возможности банкам и компаниям, оказывающим исламские услуги в республике, кроме того будет содействовать привлечению в Азербайджан исламских инвесторов. Приведем основные факторы, от-