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## **The forecasting index of (student/lecturer) for the education universities, by using the method of analyzing the time series models**

### **Abstract**

**The subject of relying on forecasting models which depend on time series has become prominent recently especially with the easy using of those models , according to application package,**

**The search harmonized many of these models and advanced methods for the gaining of accurate forecasting to an important and active indictor for the education in universities this is the average of harmonization , as it is important to know the development of the indictor to build its capacity in that field to**

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\* أستاذ مساعد / عميد كلية الراءدين الجامعة / بغداد.

emerge to in the quality and reliance also the research involves other indicators for education at universities like students admission accepting . Then comparison Was made between two various models, the method of index exponential smoothing and Box & Jenkins then select the best of them for forecasting to hose indicators , as Box & Jenkins models excelled relying on the comparison criteria (MSE)

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Exponential

Box-Jenkins models

smoothing

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19	70/71	1
22	71/72	2
21	72/73	3
22	73/74	4
23	74/75	5
21	75/76	6
20	76/77	7
19	77/78	8
17	78/79	9
17	79/80	10

16	80/81	11
16	81/82	12
17	82/83	13
18	83/84	14
17	84/85	15
19	85/86	16
17	86/87	17
17	87/88	18
19	88/89	19
18	89/90	20
17	90/91	21
19	91/92	22
19	92/93	23
16	93/94	24
17	94/95	25
20	95/96	26
21	96/97	27
22	97/98	28
23	98/99	29
23	99/00	30
22	00/01	31
22	01/02	32
21	02/03	33
21	03/04	34
18	04/05	35
16	05/06	36
12	06/07	37
12	07/08	38
12	08/09	39
12	09/10	40

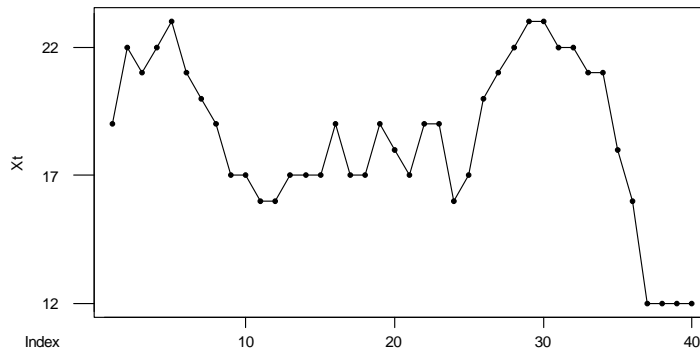
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**(2010-1970)**

12951	70/71	1
14830	71/72	2
15066	72/73	3
18664	73/74	4
20044	74/75	5
22001	75/76	6
22819	76/77	7
23638	77/78	8
26587	78/79	9
31182	79/80	10
32958	80/81	11
36159	81/82	12
34162	82/83	13
33789	83/84	14

43423	84/85	15
53037	85/86	16
45307	86/87	17
49073	87/88	18
52902	88/89	19
48401	89/90	20
49992	90/91	21
56787	91/92	22
53963	92/93	23
52455	93/94	24
73677	94/95	25
82788	95/96	26
80784	96/97	27
82519	97/98	28
88668	98/99	29
75408	99/00	30
80872	00/01	31
92467	01/02	32
95994	02/03	33
116308	03/04	34
95305	04/05	35
109044	05/06	36
99822	06/07	37
114357	07/08	38
102581	08/09	39
123339	09/10	40

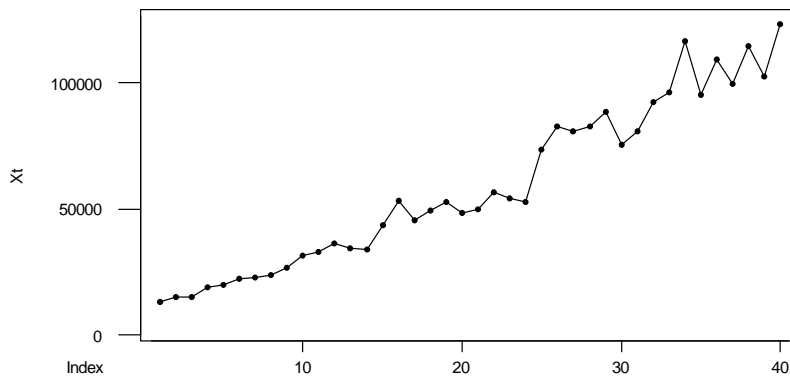
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<b>Double Exponential Smoothing</b>	
Alpha( $\alpha$ )	1.29249
Gamma( $\gamma$ )	0.00198-
MSE	2.48477

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<b>Double Exponential Smoothing</b>	
Alpha( $\alpha$ )	0.463005
Gamma( $\gamma$ )	0.08474
MSE	54855141

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<b>ARIMA(2,0,1)</b>	
	<b>Coef</b>
$\Phi_1$	<b>1.8328</b>
$\Phi_2$	<b>-0.9385</b>
$\Theta$	<b>1.0179</b>
<b>Mean Square Error</b>	<b>1.6448</b>

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<b>ARIMA(2,1,2)</b>	
<b>Type</b>	<b>Coef</b>
$\Phi_1$	<b>-0.4236</b>

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$\Phi_2$	<b>0.4363</b>
$\Theta_1$	<b>0.4831</b>
$\Theta_2$	<b>0.6544</b>
<b>Mean Square Error</b>	<b>42700227</b>

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		<b>MSE</b>	
( / )	Double Exponential Smoothing	2.48	ARIMA(2,0,1)
	ARIMA(2,0,1)	1.6448	
	Double Exponential Smoothing	<b>54855141</b>	ARIMA(2,1,2)
	ARIMA(2,1,2)	<b>42700227</b>	

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. (MSE) ARIMA

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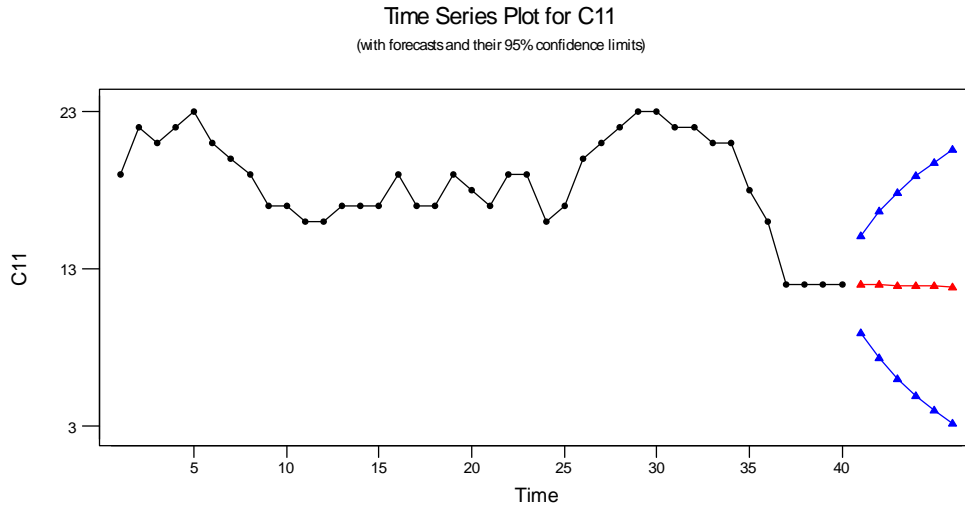
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**ARIMA (2,0,1)**

<b>Period</b>	<b>Year</b>	<b>Forecast</b>	<b>Upper</b>	<b>Lower</b>
41	10/11	12	15	9
42	11/12	12	17	7
43	12/13	12	18	6
44	13/14	12	19	5



45	14/15	12	20	4
46	15/16	12	21	3



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ARIMA (2,0,1)

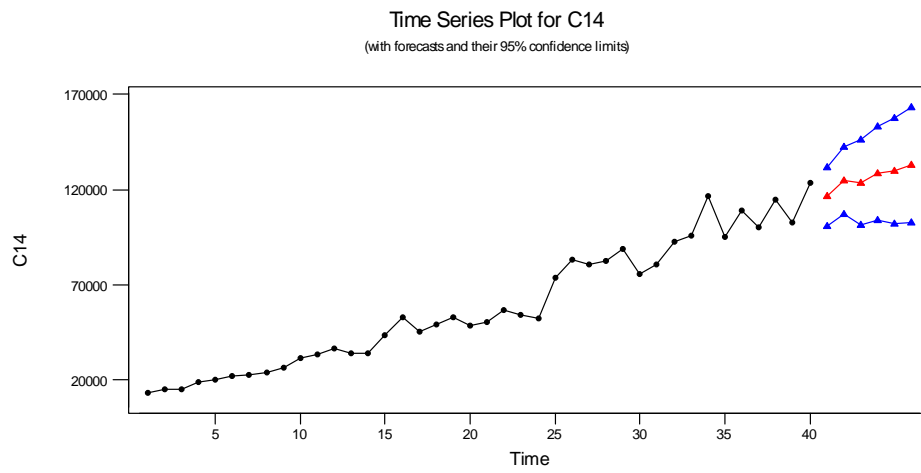
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ARIMA(2,1,2)

Period	Year	Forecast	Upper	Lower
41	10/11	116306	131837	100774
42	11/12	124807	142626	101097
43	12/13	123657	145893	101420
44	13/14	128516	153238	103794
45	14/15	129646	157440	101853
46	15/16	133104	163323	102885

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**ARIMA (2,1,2)**

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43358	70/71	1
48141	71/72	2
49194	72/73	3
58351	73/74	4
70247	74/75	5
75598	75/76	6
80499	76/77	7
85399	77/78	8
88197	78/79	9
95314	79/80	10
102430	80/81	11
109345	81/82	12
116260	82/83	13
119028	83/84	14
122241	84/85	15
141762	85/86	16
142549	86/87	17
153245	87/88	18
179458	88/89	19
184047	89/90	20
179597	90/91	21
197786	91/92	22
197437	92/93	23
186140	93/94	24
201984	94/95	25
232896	95/96	26
257278	96/97	27
266505	97/98	28
278785	98/99	29
273988	99/00	30
277195	00/01	31
297292	01/02	32
322226	02/03	33
354922	03/04	34
368753	04/05	35
380231	05/06	36
353173	06/07	37
368631	07/08	38
382873	08/09	39
416414	09/10	40

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(2010-1970)

12951	70/71	1
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82788	95/96	26
80784	96/97	27
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95305	04/05	35
109044	05/06	36
99822	06/07	37
114357	07/08	38
102581	08/09	39

123339	09/10	40
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(2010-1970)

1910	70/71	1
2166	71/72	2
2288	72/73	3
2144	73/74	4
2363	74/75	5
2669	75/76	6
3016	76/77	7
3661	77/78	8
4079	78/79	9
4496	79/80	10
5207	80/81	11
5680	81/82	12
6555	82/83	13
6943	83/84	14
6674	84/85	15
6934	85/86	16
7280	86/87	17
7616	87/88	18
8327	88/89	19
8805	89/90	20
9458	90/91	21
10171	91/92	22
10548	92/93	23
10520	93/94	24
10591	94/95	25
11789	95/96	26
11848	96/97	27
11685	97/98	28
11986	98/99	29
12101	99/00	30
11993	00/01	31
12068	01/02	32
12402	02/03	33
13240	03/04	34

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<b>15523</b>	<b>04/05</b>	<b>35</b>
<b>17003</b>	<b>05/06</b>	<b>36</b>
<b>21046</b>	<b>06/07</b>	<b>37</b>
<b>24459</b>	<b>07/08</b>	<b>38</b>
<b>29109</b>	<b>08/09</b>	<b>39</b>
<b>30109</b>	<b>09/10</b>	<b>40</b>

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