

STATISTICAL NEWS

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SEASONALLY ADJUSTED VISITOR ARRIVALS JANUARY 2020

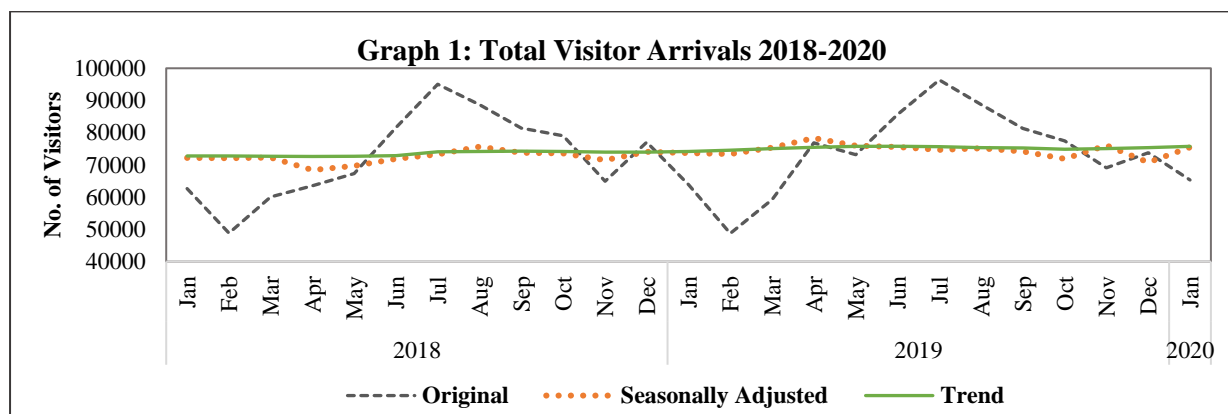
Seasonal adjustment is the process of estimating and then removing from a time series influences that are systematic and calendar related. Observed (original) data needs to be seasonally adjusted as seasonal effects can hide both the true underlying movement in the series, as well as certain non-seasonal characteristics which may be of interest to analysts.

Trend estimates show the long term, underlying movement in the series after the removal of seasonal and irregular influences.

Seasonally Adjusted estimates show the trend and irregular components after removing all seasonal and systematic related behaviors from the series.

Original estimates are the actual values observed and contain the trend, seasonal and irregular components.¹

Total Visitor Arrivals to Fiji



	January 2020	December 2019 to January 2020 % change	January 2019 to January 2020 % change
Total			
Trend	75,761	0.51	2.10
Seasonally Adjusted	75,469	6.58	...
Original	65,386	...	...

Trend estimates of Total Visitor Arrivals during January 2020 (75,761) increased by 0.51%, compared with December 2019 (75,373). The current trend estimate for arrivals is 2.10% higher than January 2019.

Seasonally adjusted estimates of Total Visitor Arrivals to Fiji (75,469) in January 2020 increased by 6.58% compared with December 2019 (70,813).

Original estimates of Total Visitor Arrivals to Fiji in January 2020 was 65,386. In this publication, the month-to-month % change and year-to-year % change is not reported as they contain seasonal and irregular influences that may hide the underlying, long term movement of the series.

¹ For more details on trend, seasonal and irregular influences, see "Appendix: 1, Explanatory Notes" pages: 9-11.

Graph 1 shows the Total Visitor Arrivals to Fiji from January 2019 to January 2020 using three series: original, seasonally adjusted and trend. In terms of the original series, arrivals in February are low which could be due to visitors returning to their home countries after the holiday period in December and January. February also has less days compared to other months of the year. Arrivals in June and July on the other hand, are higher as these are winter months in the southern hemisphere. These variations contribute to calendar related, seasonal and irregular influences in the series, therefore seasonally adjusted and trend estimates are produced to show the true underlying movement of the series.

Visitor Arrivals by Country of Residence

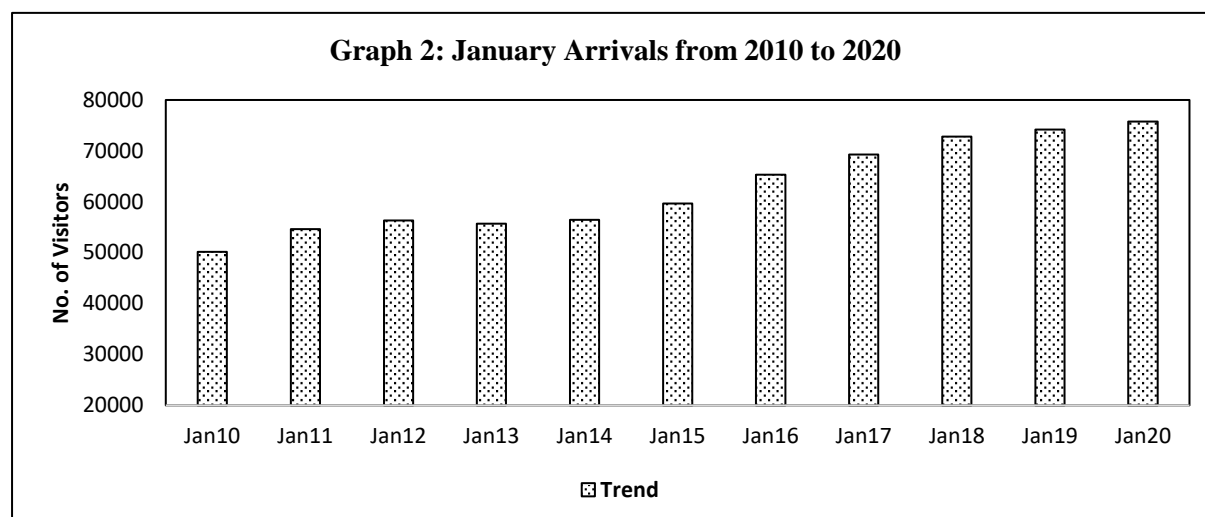
	January 2020	December 2019 to January 2020 % change	January 2019 to January 2020 % change
Australia			
Trend	32,123	0.91	4.69
Seasonally Adjusted	32,038	6.70	...
Original	29,886	...	...
New Zealand			
Trend	17,465	0.87	1.73
Seasonally Adjusted	17,190	1.99	...
Original	11,316	...	...
USA			
Trend	8,356	-0.27	10.50
Seasonally Adjusted	8,165	14.97	...
Original	6,209	...	...
Continental Europe			
Trend	2,957	0.61	-1.53
Seasonally Adjusted	3,018	20.24	...
Original	2,802	...	...
Japan			
Trend	1,088	-1.98	-17.20
Seasonally Adjusted	782	-31.94	...
Original	726	...	...
Pacific Islands			
Trend	4,464	-0.42	0.68
Seasonally Adjusted	4,308	9.31	...
Original	5,022	...	...

...not applicable (see notes below and “Appendix 1-Explanatory Notes” for more details)

Note:

1. The Original series is dominated by seasonal and irregular influences. Due to these influences, *Month-to-month % change* and *year-to-year % change* in the original estimates are not shown here and must be used with caution.
2. *Year-to-year % change* in the seasonally adjusted estimates are not shown here and must be used with caution as irregular influences can dominate movements.

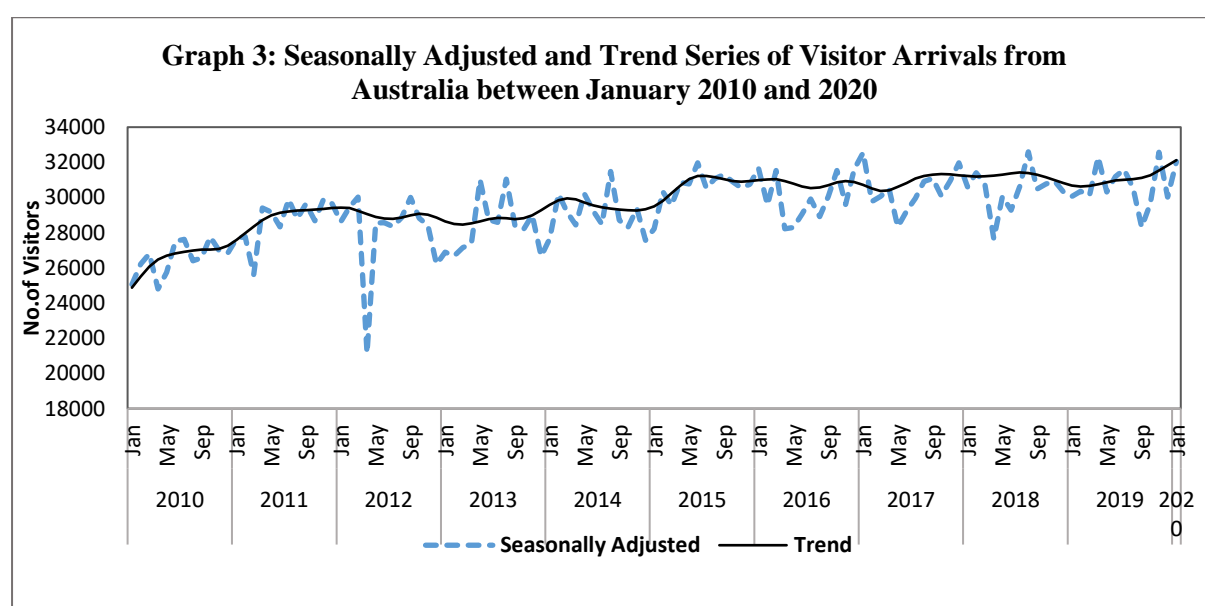
January Visitor Arrivals

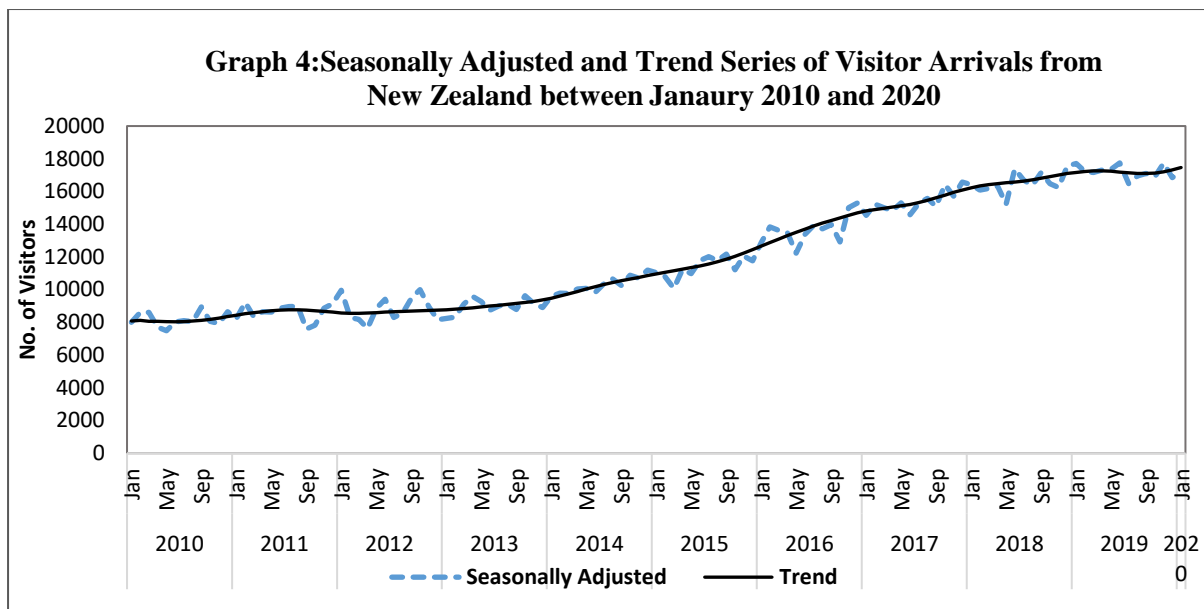


Graph 2 shows the trend of visitor arrivals to Fiji in January from 2010 to 2020. The number of arrivals has increased over the years except for a slight decline in the year 2013. Visitor arrivals in January 2013 **fell by 1.12%** when compared with the previous year. Highest increment in the ten-year period was noted in January 2016 (**up by 9.46%**). The overall visitor arrivals in January is trending upwards indicating its positive effect on Fiji's Tourism. Upon comparison between January 2019 and January 2020, a **2.10%** increment was noted. To graph the long term movement of arrivals, trend series is used because it is adjusted and does not contain seasonal and irregular influences.

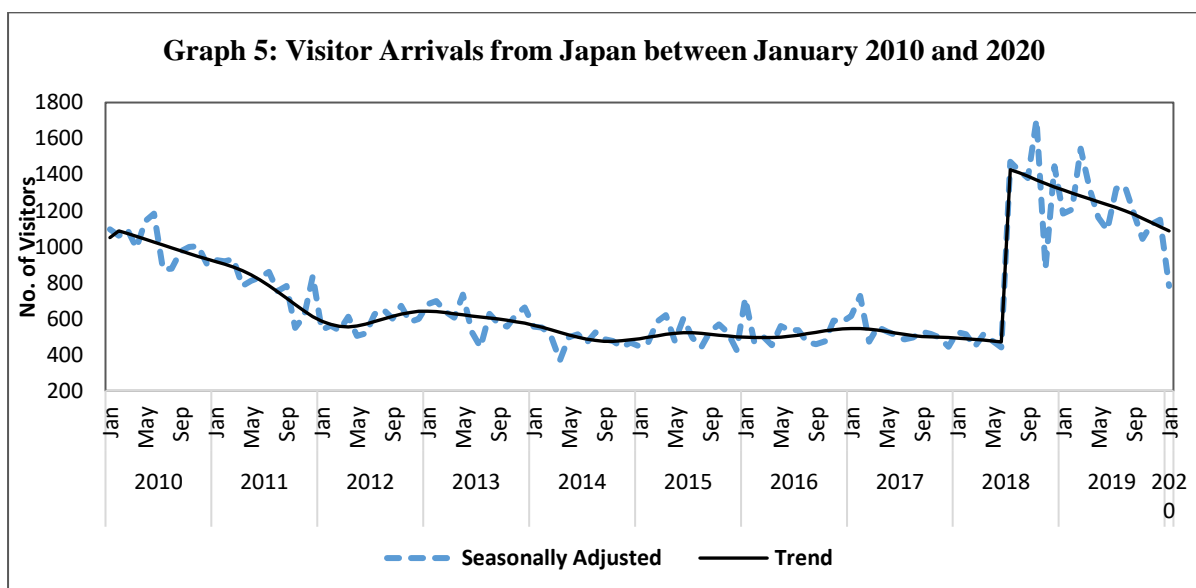
Arrivals from Australia and New Zealand

Australia and New Zealand are the two major contributors of Visitor Arrivals in Fiji, consisting of 45.71% and 17.31% of total arrivals respectively. After removing seasonal and irregular influences, arrivals from Australia (Graph 3) shows a slightly increasing **trend** which has been generally stable since 2010. On the other hand, arrivals from New Zealand (Graph 4) is **trending** upwards. The seasonally adjusted series contains both the trend as well as random fluctuations and the impact of one-off real world events. Graph 3 shows the presence of a one-off event depicted by seasonally adjusted estimates in 2012. The flood period towards the end of March caused a huge reduction in arrivals from Australia in April.





Arrivals from Japan

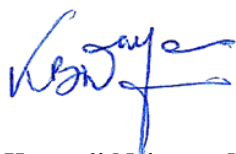


Graph 5 shows the number of visitor arrivals from Japan between January 2010 and 2020. In terms of the trend series, the arrivals from Japan declined by **17.20%** compared to the same time last year. A reduction of **1.98%** was also noted from December 2019 to January 2020. According to the seasonally adjusted figures, arrivals from Japan declined by **31.94%** from December 2019 to January 2020. Graph 5 also illustrates a trend break which occurred after the operational of direct flights from Narita to Fiji in July 2018. The series shifted to a new level since then but is gradually following a declining trend afterwards.

For more information, the following can be referred to:

- Table 1: Original and Seasonally Adjusted Visitor Arrivals- Number by Country of Residence
- Table 2: Seasonally Adjusted and Trend Series of Visitor Arrivals- Number by Country of Residence
- Appendix 1: Explanatory Notes

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TABLE 1

ORIGINAL AND SEASONALLY ADJUSTED VISITOR ARRIVALS : NUMBER BY COUNTRY OF RESIDENCE

YEAR	MONTH	AUSTRALIA	NEW ZEALAND	USA	CANADA	UNITED KINGDOM	CONTINENTAL EUROPE	JAPAN	SOUTH KOREA	REST OF ASIA	PACIFIC ISLANDS	OTHERS	TOTAL
ORIGINAL VISITOR ARRIVALS													
2018	January	28,313	10,612	5,617	1,000	1,321	2,952	505	792	5,569	5,529	438	62,648
	February	17,014	6,641	5,951	993	1,252	2,682	510	553	8,245	4,416	541	48,798
	March	25,196	9,868	7,264	1,196	1,474	2,706	427	720	6,667	4,112	428	60,058
	April	26,809	13,731	6,170	908	1,261	2,763	438	760	6,346	3,926	423	63,535
	May	29,730	14,383	7,059	834	1,239	3,013	391	598	5,907	3,725	411	67,290
	June	32,785	22,404	9,962	1,099	1,239	2,431	336	683	5,923	4,450	341	81,653
	July	35,608	28,572	9,104	1,675	1,871	3,392	1,736	712	7,513	4,403	475	95,061
	August	34,641	24,065	7,727	1,437	1,486	4,301	2,454	685	7,297	4,219	381	88,693
	September	35,585	21,675	6,060	883	1,000	3,176	1,723	585	6,340	4,014	396	81,437
	October	34,899	18,562	7,004	957	1,379	3,621	1,335	772	6,241	3,923	384	79,077
	November	29,828	12,631	6,913	1,063	1,145	3,092	693	699	4,314	4,290	321	64,989
	December	35,252	15,574	7,244	1,175	1,630	3,304	1,355	617	5,837	4,647	435	77,070
2019	January	27,860	11,573	5,709	1,121	1,265	2,906	1,127	766	5,806	5,203	471	63,807
	February	15,489	7,145	5,855	1,023	1,375	2,355	1,203	677	8,205	5,011	410	48,748
	March	22,972	9,457	8,323	1,247	1,471	2,758	1,468	586	6,302	4,240	482	59,306
	April	32,850	16,126	7,938	1,090	1,444	3,223	1,125	648	7,291	4,646	432	76,813
	May	30,035	16,372	8,585	984	1,374	2,536	944	813	6,876	4,179	471	73,169
	June	34,620	23,076	10,504	949	1,605	2,708	803	547	5,945	4,471	424	85,652
	July	36,799	27,963	9,926	1,601	2,020	3,541	1,571	602	6,995	4,849	509	96,376
	August	32,725	24,790	8,721	1,244	1,446	4,468	2,363	627	7,970	4,091	389	88,834
	September	33,329	21,632	8,027	897	1,246	3,031	1,491	741	6,169	4,298	493	81,354
	October	33,739	19,024	8,428	886	1,164	3,214	810	255	5,284	4,256	407	77,467
	November	31,701	13,788	7,922	1,043	1,171	2,749	870	269	4,430	4,882	298	69,123
	December	34,901	15,052	7,030	1,184	1,275	2,569	1,093	275	5,659	4,243	459	73,740
2020	January	29,886	11,316	6,209	1,075	1,423	2,802	726	316	6,139	5,022	472	65,386
SEASONALLY ADJUSTED VISITOR ARRIVALS													
2018	January	30,616	16,415	7,323	1,067	1,403	2,954	526	707	6,073	4,742	412	72,238
	February	31,401	16,088	7,097	1,089	1,322	3,131	514	658	6,314	3,957	561	72,132
	March	30,776	16,174	7,071	1,071	1,353	2,795	445	740	6,937	4,560	401	72,323
	April	27,659	16,348	7,199	970	1,275	2,693	515	817	6,231	4,267	443	68,417
	May	30,060	15,230	7,012	912	1,331	3,242	476	618	6,332	4,032	421	69,666
	June	29,280	17,376	7,224	1,325	1,244	2,989	441	702	6,406	4,520	392	71,899
	July	30,622	16,696	6,826	1,178	1,393	3,135	1,471	733	6,636	4,184	431	73,305
	August	32,598	16,371	7,339	1,206	1,406	3,401	1,424	725	6,416	4,428	379	75,693
	September	30,488	17,145	7,117	1,166	1,273	3,375	1,380	609	6,577	4,311	381	73,822
	October	30,774	16,471	7,217	1,025	1,496	3,309	1,705	682	6,298	4,188	403	73,568
	November	30,942	16,233	7,408	1,074	1,309	3,140	879	640	5,334	4,132	376	71,467
	December	30,338	17,545	7,299	1,135	1,450	3,120	1,446	568	6,497	4,311	400	74,109
2019	January	30,064	17,706	7,480	1,175	1,344	2,884	1,184	682	6,298	4,450	434	73,701
	February	30,347	17,215	7,023	1,121	1,462	2,784	1,206	812	6,420	4,529	419	73,338
	March	30,120	17,171	8,846	1,121	1,371	3,027	1,545	598	6,456	4,674	451	75,380
	April	32,292	17,325	8,410	1,166	1,472	3,113	1,322	698	7,076	5,019	445	78,338
	May	30,309	17,349	8,497	1,082	1,475	2,940	1,162	841	7,255	4,554	472	75,936
	June	31,190	17,746	7,645	1,126	1,599	3,158	1,093	562	6,419	4,537	479	75,554
	July	31,582	16,476	7,495	1,122	1,467	3,291	1,322	620	6,176	4,640	461	74,652
	August	30,558	16,939	8,265	1,037	1,365	3,269	1,336	667	7,035	4,285	406	75,162
	September	28,322	17,110	9,380	1,164	1,585	3,227	1,185	773	6,405	4,596	472	74,219
	October	29,654	16,909	8,644	966	1,263	2,855	1,043	225	5,362	4,544	424	71,889
	November	32,572	17,733	8,487	1,077	1,366	2,841	1,125	247	5,562	4,696	361	76,067
	December	30,025	16,855	7,102	1,148	1,135	2,510	1,149	252	6,274	3,941	422	70,813
2020	January	32,038	17,190	8,165	1,116	1,513	3,018	782	280	6,627	4,308	432	75,469

*China India and Hong Kong are included in Rest of Asia

*Seasonally Adjusted figures and trend estimates change as new data becomes available. This ensures that the most up-to-date and best possible estimates are derived.

TABLE 2

SEASONALLY ADJUSTED AND TREND VISITOR ARRIVALS : NUMBER BY COUNTRY OF RESIDENCE

YEAR	MONTH	AUSTRALIA	NEW ZEALAND	USA	CANADA	UNITED KINGDOM	CONTINENTAL EUROPE	JAPAN	SOUTH KOREA	REST OF ASIA	PACIFIC ISLANDS	OTHERS	TOTAL
SEASONALLY ADJUSTED VISITOR ARRIVALS													
2018	January	30,616	16,415	7,323	1,067	1,403	2,954	526	707	6,073	4,742	412	72,238
	February	31,401	16,088	7,097	1,089	1,322	3,131	514	658	6,314	3,957	561	72,132
	March	30,776	16,174	7,071	1,071	1,353	2,795	445	740	6,937	4,560	401	72,323
	April	27,659	16,348	7,199	970	1,275	2,693	515	817	6,231	4,267	443	68,417
	May	30,060	15,230	7,012	912	1,331	3,242	476	618	6,332	4,032	421	69,666
	June	29,280	17,376	7,224	1,325	1,244	2,989	441	702	6,406	4,520	392	71,899
	July	30,622	16,696	6,826	1,178	1,393	3,135	1,471	733	6,636	4,184	431	73,305
	August	32,598	16,371	7,339	1,206	1,406	3,401	1,424	725	6,416	4,428	379	75,693
	September	30,488	17,145	7,117	1,166	1,273	3,375	1,380	609	6,577	4,311	381	73,822
	October	30,774	16,471	7,217	1,025	1,496	3,309	1,705	682	6,298	4,188	403	73,568
	November	30,942	16,233	7,408	1,074	1,309	3,140	879	640	5,334	4,132	376	71,467
	December	30,338	17,545	7,299	1,135	1,450	3,120	1,446	568	6,497	4,311	400	74,109
2019	January	30,064	17,706	7,480	1,175	1,344	2,884	1,184	682	6,298	4,450	434	73,701
	February	30,347	17,215	7,023	1,121	1,462	2,784	1,206	812	6,420	4,529	419	73,338
	March	30,120	17,171	8,846	1,121	1,371	3,027	1,545	598	6,456	4,674	451	75,380
	April	32,292	17,325	8,410	1,166	1,472	3,113	1,322	698	7,076	5,019	445	78,338
	May	30,309	17,349	8,497	1,082	1,475	2,940	1,162	841	7,255	4,554	472	75,936
	June	31,190	17,746	7,645	1,126	1,599	3,158	1,093	562	6,419	4,537	479	75,554
	July	31,582	16,476	7,495	1,122	1,467	3,291	1,322	620	6,176	4,640	461	74,652
	August	30,558	16,939	8,265	1,037	1,365	3,269	1,336	667	7,035	4,285	406	75,162
	September	28,322	17,110	9,380	1,164	1,585	3,227	1,185	773	6,405	4,596	472	74,219
	October	29,654	16,909	8,644	966	1,263	2,855	1,043	225	5,362	4,544	424	71,889
	November	32,572	17,733	8,487	1,077	1,366	2,841	1,125	247	5,562	4,696	361	76,067
	December	30,025	16,855	7,102	1,148	1,135	2,510	1,149	252	6,274	3,941	422	70,813
2020	January	32,038	17,190	8,165	1,116	1,513	3,018	782	280	6,627	4,308	432	75,469
TREND SERIES VISITOR ARRIVALS													
2018	January	31,220	16,223	7,184	1,040	1,377	3,024	492	736	6,402	4,676	417	72,791
	February	31,193	16,330	7,188	1,049	1,351	3,020	489	727	6,423	4,577	423	72,770
	March	31,200	16,411	7,157	1,062	1,328	3,005	485	717	6,418	4,467	424	72,674
	April	31,236	16,473	7,117	1,077	1,313	3,010	481	706	6,418	4,376	421	72,628
	May	31,298	16,526	7,086	1,092	1,310	3,054	477	697	6,439	4,321	416	72,716
	June	31,380	16,580	7,078	1,106	1,319	3,127	471	689	6,457	4,302	410	72,919
	July	31,426	16,642	7,099	1,118	1,338	3,211	1,427	682	6,467	4,296	404	74,110
	August	31,393	16,716	7,131	1,127	1,355	3,276	1,410	677	6,460	4,282	399	74,226
	September	31,307	16,806	7,172	1,133	1,370	3,295	1,391	672	6,447	4,262	397	74,252
	October	31,154	16,905	7,225	1,136	1,380	3,255	1,370	667	6,410	4,246	399	74,147
	November	30,992	17,005	7,297	1,136	1,384	3,178	1,350	663	6,358	4,261	403	74,027
	December	30,834	17,096	7,406	1,134	1,387	3,085	1,331	660	6,357	4,329	411	74,030
2019	January	30,683	17,168	7,562	1,132	1,395	3,003	1,314	658	6,432	4,434	420	74,201
	February	30,625	17,221	7,750	1,128	1,415	2,962	1,297	657	6,551	4,548	430	74,584
	March	30,659	17,251	7,944	1,123	1,440	2,971	1,281	658	6,662	4,636	439	75,064
	April	30,755	17,253	8,099	1,119	1,466	3,025	1,265	659	6,727	4,669	446	75,483
	May	30,868	17,231	8,206	1,116	1,482	3,102	1,250	663	6,730	4,647	451	75,746
	June	30,965	17,190	8,272	1,113	1,479	3,167	1,234	668	6,658	4,598	452	75,796
	July	31,010	17,144	8,318	1,110	1,457	3,190	1,217	675	6,515	4,558	450	75,644
	August	31,037	17,110	8,361	1,107	1,421	3,164	1,199	684	6,358	4,535	445	75,421
	September	31,108	17,101	8,393	1,105	1,384	3,101	1,179	693	6,241	4,529	439	75,273
	October	31,265	17,128	8,407	1,104	1,356	3,027	1,157	244	6,189	4,528	432	74,837
	November	31,527	17,200	8,401	1,105	1,343	2,965	1,134	248	6,189	4,511	426	75,049
	December	31,834	17,315	8,379	1,106	1,342	2,939	1,110	251	6,192	4,483	422	75,373
2020	January	32,123	17,465	8,356	1,107	1,347	2,957	1,088	254	6,181	4,464	419	75,761

*China India and Hong Kong are included in Rest of Asia

*Seasonally Adjusted figures and trend estimates change as new data becomes available. This ensures that the most up-to-date and best possible estimates are derived.

APPENDIX 1: EXPLANATORY NOTES

WHAT IS A TIME SERIES?

A time series is a collection of observations of well-defined data items obtained through repeated measurements over time. For example, measuring the value of retail sales each month over several years would comprise a time series. This is because sales revenue is well defined, and consistently measured at equally spaced intervals. Data collected irregularly or only once are not time series. In this release, monthly Visitor Arrivals to Fiji by country of residence for the past 10 years (from 2010) are analyzed as a time series. An observed time series can be decomposed into three components: the trend (long term direction), the seasonal (systematic, calendar related movements) and the irregular (unsystematic, short term fluctuations).

WHAT ARE SEASONAL EFFECTS?

A seasonal effect is a systematic and calendar related effect. Some examples include the sharp escalation in most Retail series leading up to December due to the Christmas holiday period, or the increase in tourist arrivals to Fiji during the winter months of Australia and New Zealand.

WHAT IS SEASONAL ADJUSTMENT AND WHY DO WE NEED IT?

Seasonal adjustment is the process of estimating and then removing from a time series influences that are systematic and calendar related. Observed data needs to be seasonally adjusted as seasonal effects can conceal both the true underlying movements in the series, as well as certain non-seasonal characteristics which may be of interest to analysts.

WHY CAN'T WE JUST COMPARE ORIGINAL DATA FROM THE SAME PERIOD IN EACH YEAR?

A comparison of original data from the same period in each year does not completely remove all seasonal effects. Certain holidays such as Easter and Chinese New Year fall in different periods in each year, hence they will distort observations. Also, year to year values will be biased by any changes in seasonal patterns that occur over time. For example, consider a comparison between two consecutive March months i.e. compare the level of the original series observed in March for 2000 and 2001. This comparison ignores the moving holiday effect of Easter. Easter occurs in April for most years but if Easter falls in March, the level of activity can vary greatly for that month for some series. This distorts the original estimates. A comparison of these two months will not reflect the underlying pattern of the data. The comparison also ignores trading day effects. If the two consecutive months of March have different composition of trading days, it might reflect different levels of activity in original terms even though the underlying level of activity is unchanged. In a similar way, any changes to seasonal patterns might also be ignored. The original estimates also contain the influence of the irregular component. If the magnitude of the irregular component of a series is strong compared with the magnitude of the trend component, the underlying direction of the series can be distorted.

However, the major disadvantage of comparing year to year original data, is lack of precision and time delays in the identification of turning points in a series. Turning points occur when the direction of underlying level of the series changes, for example when a consistently decreasing series begins to rise steadily. If we compare year apart data in the original series, we may miss turning points occurring during

the year. For example, if March 2001 has a higher original estimate than March 2000, by comparing these year apart values, we might conclude that the level of activity has increased during the year. However, the series might have increased up to September 2000 and then started to decrease steadily.

WHICH INDICATOR SHOULD BE USED TO COMPARE MONTH-TO-MONTH OR QUARTER-TO QUARTER PERCENTAGE CHANGES?

Original estimates- *Do not use*

Usually dominated by seasonal effects; also residual noise and irregular influences

Seasonally adjusted estimates- *Use with caution*

Provides useful information on the effects of short term, major events. Dominated by irregular and noise, except for series with very little volatility

Trend estimates- *Preferred option*

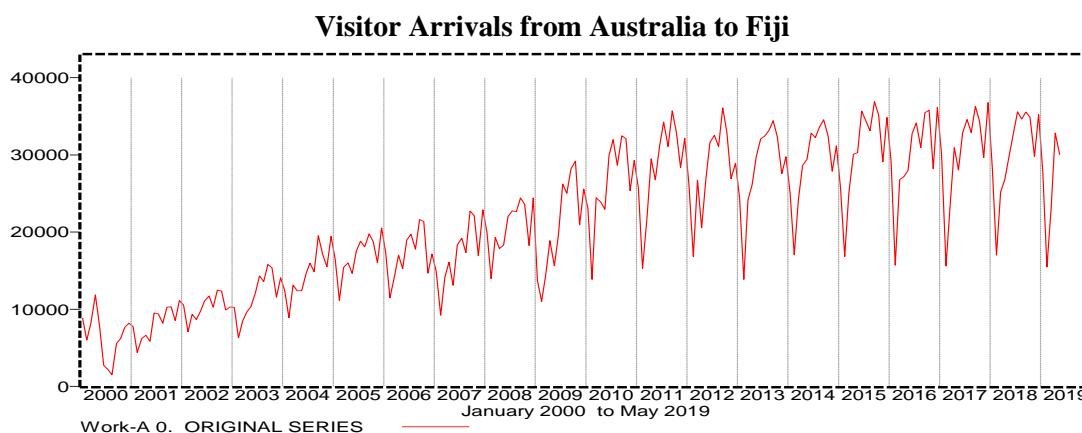
The best indicator of underlying behavior for month-to-month or quarter-to-quarter changes. Recent estimates, usually the last 3 or 4, may be revised.

WHEN IS SEASONAL ADJUSTMENT INAPPROPRIATE?

When a time series is dominated by the trend or irregular components, it is nearly impossible to identify and remove what little seasonality is present. Hence seasonally adjusting a non-seasonal series is impractical and will often introduce an artificial seasonal element.

WHAT IS THE SEASONAL COMPONENT?

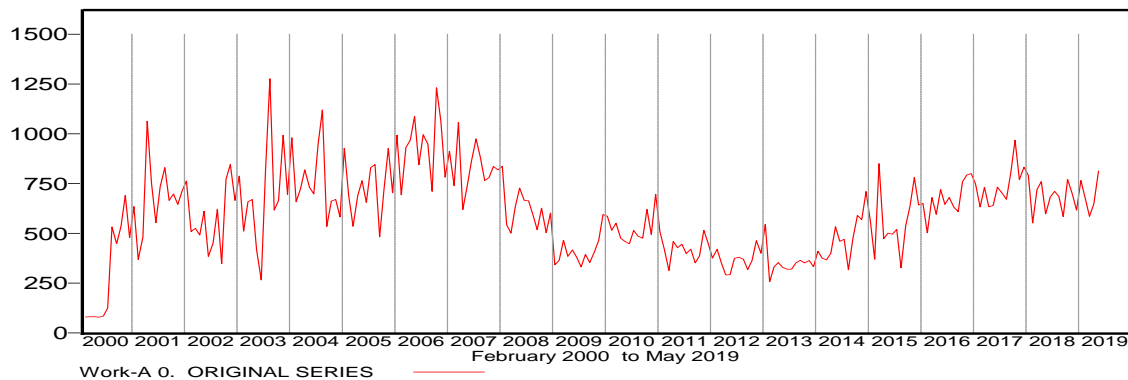
Seasonality in a time series can be identified by regularly spaced peaks and troughs which have a consistent direction and approximately the same magnitude every year, relative to the trend. The following diagram depicts a strongly seasonal series. There is an obvious large seasonal increase in tourist arrival from Australia in December due to holiday season which starts to decline from January every year. In this example, the magnitude of the seasonal component increases over time, as does the trend.



WHAT IS AN IRREGULAR?

The irregular component (sometimes also known as the residual) is what remains after the seasonal and trend components of a time series have been estimated and removed. It results from short term fluctuations in the series which are neither systematic nor predictable. In a highly irregular series, these fluctuations can dominate movements, which will mask the trend and seasonality. The following graph is an example of a highly irregular time series.

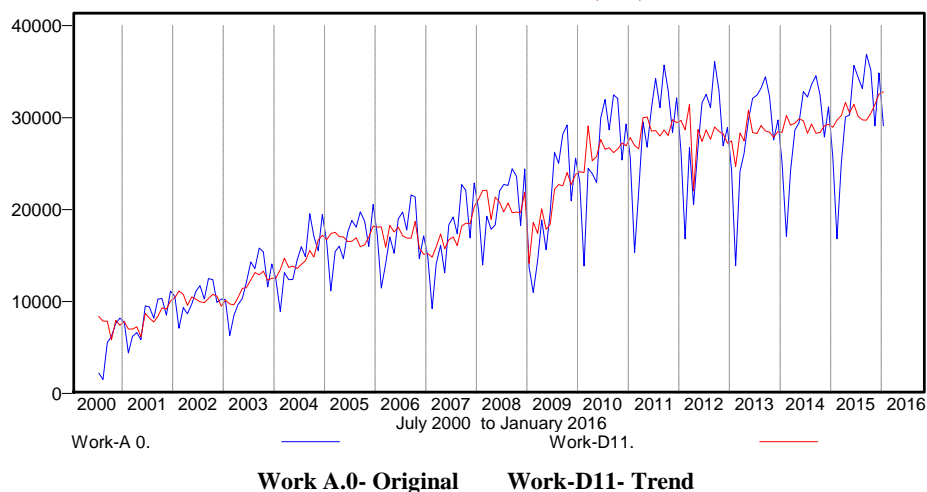
Visitor Arrivals from South Korea to Fiji



WHAT IS THE TREND?

The trend is defined as the 'long term' movement in a time series without calendar related and irregular effects, and is a reflection of the underlying level. It is the result of influences such as population growth, price inflation and general economic changes. The following graph depicts a series in which there is an obvious upward trend over time:

Visitor Arrivals from Australia to Fiji - Trend



HOW IS SEASONAL ADJUSTMENT CONDUCTED?

To seasonally adjust series FBoS uses JDemetra Plus package which is developed by the National Bank of Belgium in collaboration with EuroStat. JDemetra uses a filter based method of seasonal adjustment.

The procedure consists of the following steps:

- 1) Estimate the trend by a moving average
- 2) Remove the trend leaving the seasonal and irregular components
- 3) Estimate the seasonal component using moving averages to smooth out the irregulars.

HANDLING UNUSUAL BEHAVIOURS IN A TIME SERIES

Often series display behaviour that is not consistent with the expected seasonal pattern or trend. When series are not well behaved they need to be corrected or adjusted to avoid obtaining an inferior seasonal adjustment. Since seasonal adjustment often involves filters, any strange values will have a large impact on the final result average is influenced by a real large or low value. The original series are not always well behaved. In reality, there are activities that are systematic and predictable, but doesn't affect the same calendar period the same way every year, for example, moving holidays, trading day, etc. There are cases of unusually high or low values, sudden and sustained level shifts, and sudden and sustained changes in the seasonal pattern. Before estimating the components of the time series, we need to correct for these so that we have a series that is better but may not be perfect because we are still dealing with estimates. Prior corrected series is used for calculating higher quality estimates of the Seasonal factors and the Trend. It enables more adequate models to be found both in terms of the decomposition model and ARIMA model. It also ensures that the results of the seasonal adjustment process are not distorted by known events.

EXTREME VALUES

Extremes or outliers are values in a time series that are unusually large or small relative to the other data. They can distort the appearance of the underlying movement of the time series by altering the trend. For this reason, and to improve estimation of the three series components (trend, seasonal and irregular), it is necessary to detect and correct outliers.

For example, a real world event one off event (like a tropical cyclone) could lead to a sudden and drastic decline or increase in the number of Tourist Arrivals. In this case, an extreme value correction is applied prior to seasonal adjustment to ensure an optimal result. The value is then returned to the seasonally adjusted series to show the extent of the effect of the real world event.

TREND BREAKS

An abrupt but sustained change in the level of a time series is known as a trend break. This is reflected in at least 6 months or 3 quarters of raised or lowered levels. If the span of increased or decreased values is shorter than this, they are classified as extreme values.

For example, real world events could lead to a sudden and sustained change in the level of the series. In this case, trend break corrections are applied and the factor is returned to the trend and seasonally adjusted series.

Other Factors to consider in producing optimal seasonal adjustment results

Trading Day Effects

The number of occurrences of each of the day of the week in a given month will differ from year to year

- There were 4 weekends in March in 2000, but 5 weekends in March of 2002

Moving Holiday Effects

Holidays which occur each year, but whose exact timing shifts

- Easter, Chinese New Year

(Source: Australian Bureau of Statistics)