Samoa Bureau of Statistics

Gross Domestic Product

December 2020 Quarter

Overview

31st March 2021

NEW!

New base year for computing GDP at constant prices is now 2013 replacing the old base year of 2009.

2013 = 100

Special points of interest:

- *GDP Growth - -8.0%*
- *GDP at Constant 2013 Prices (real) - **WST $462.5 million***
- *GDP at Current Prices (nominal) - **WST $513.4 million***

Inside this issue:

*Economic activity, as measured by Gross Domestic Product (GDP) fell 8.0% in the **December 2020 quarter**, recording a total GDP in real terms of $462.5 million. The growth in the quarter under review makes it the fifth quarterly decline for the economy which started in December 2019. This follows revised growth rates of –15.4% and –10.4 in the September and June 2020 quarters respectively. The economy continues to decline due to the impacts of the Covid-19 pandemic with boarders remained closed to international tourists for the entirety of the quarter. The pandemic has directly affected most sectors of the economy with constructions, travel and tour related activities, air, sea and land transport, accommodation and restaurant and financial services being the hardest hit.*

GDP Growth:

Gross Domestic Product for the **December 2020 Quarter** at constant 2013 prices amounted to $462.5 million, decreasing by 8.0% compared to the December 2019 quarter. This follows a revised growth of –15.4% in September 2020.

Chart 1: Total GDP at constant prices & growth

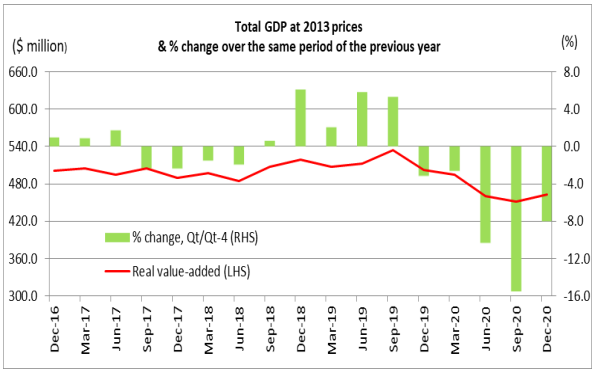


Chart 1 shows GDP at constant prices from December 2016 to December 2020 and the year-on-year (y-o-y) growth rates as measured by the percentage change on the same quarter of the previous year. The economy has now recorded five consecutive quarters of negative growth reflecting the impact of the measles epidemic in December 2019 and the Covid-19 pandemic on the economy. Still, the decline in the December 2020 quarter has moderated from the early months of the outbreak. The December 2020 quarter results reflect an easing of activity following a post-lockdown catch up in the previous quarter, and the continued absence of international visitors. As a result, services industries which make up more than two thirds of the economy fell 7.8 percent. Goods-producing industries declined 13.6 percent with construction being the major contributor to this decrease, while primary industries fell slightly by 0.1 percent in the December 2020 quarter.

Chart 2: Percentage-point contributions to GDP

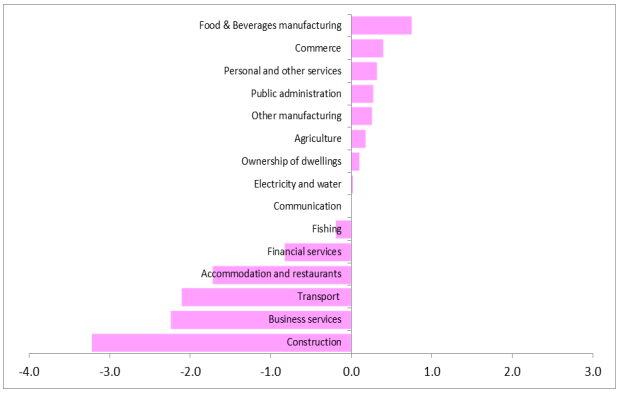


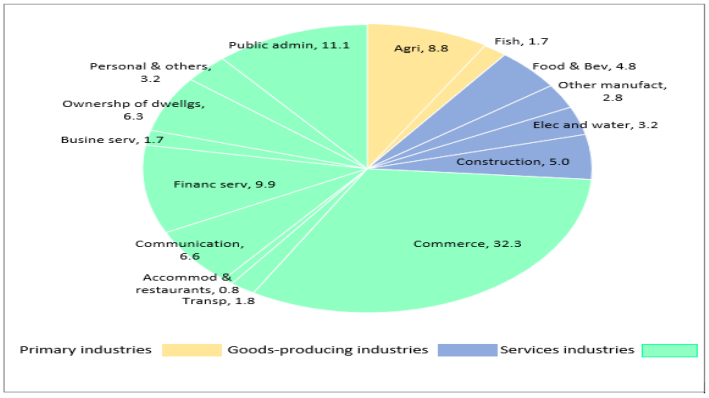
Chart 2 above indicates the percentage-points (pp) contributions of each industry to the overall growth of –8.0% in the December 2020 quarter. The largest contributors to the drop in output came from Construction, Business services, Transport, Accommodation and Restaurants, along with Financial services with contributions

of –3.2 pp, -2.2 pp, -2.1 pp, -1.7 pp and -0.8 pp respectively to overall growth in the period.

Despite the relatively low levels of restriction on movement and business activity in the month of December compared to the March, June and September 2020 quarters, COVID-19 restrictions are still having an impact on economic activity. The construction industry was the primary contributor to the decline in GDP in the quarter under review. It has not recorded a single increase since December 2019. Business services was the second biggest contributor to the overall decline due to the impact of the pandemic on the tour operators and travel related businesses; real estate activities also declined during this period. Accommodation & Restaurants was the third largest contributor to the overall decline, it went down by 73.0% due to the closure of borders to incoming international flights throughout the reviewed quarter. Financial services has now recorded two consecutive quarters of negative growth as a result of the decline in activities of monetary institutions other than the central bank such as banks, credit unions etc. Fishing fell 13.8% as the industry continues to be affected by poor weather conditions.

On the other hand, industries that recorded positive growths were Food & Beverage manufacturing, Commerce, Personal & other services, Public administration, Other manufacturing, Agriculture, Ownership of Dwellings, Electivity & Water and Communication. The increase by these nine industries was not high enough to offset the rapid decline by the industries recording

Chart 3:Composition of Nominal GDP, December 2020 Quar-



negative growths in the period.

GDP Levels (Nominal):

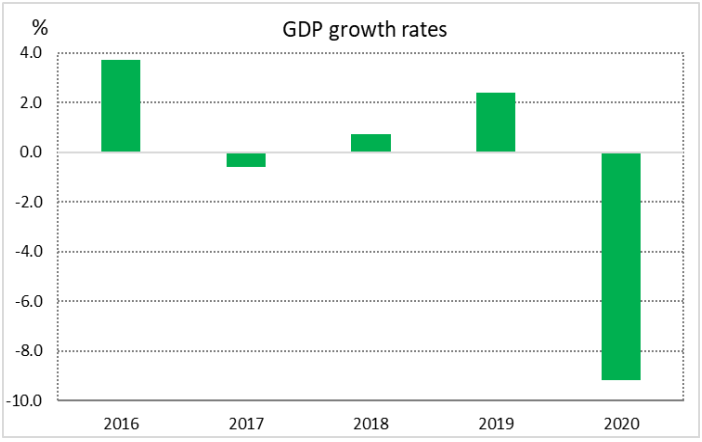
Gross Domestic Product at current prices or nominal GDP for the **December 2020 quarter** amounted to $513.4 million. It decreased by 6.4% compared to the December 2019 quarter.

Chart 3 shows the industry composition of GDP at current market prices in the December 2020 quarter. Tertiary sector (services industries) comprising 73.8% of total nominal GDP, went down by 0.3 pp compared to December 2019. The goods-producing industries which is the second largest sector went down by 0.2 pp on a y-o-y basis due to the biggest decline in Construction. The Primary sector which accounts for 10.5% of GDP increased its share by 0.5 pp. The decline in the Fishing industry was counterbalanced by the rise in Agricultural activities.

Twelve Months Review for the year ended Dec 2020:

GDP for the year ended December 2020 (January 2020—December 2020) at current market prices was $2,056.9 million, decreasing by 8.3% compared to the $2,244.2 million recorded in

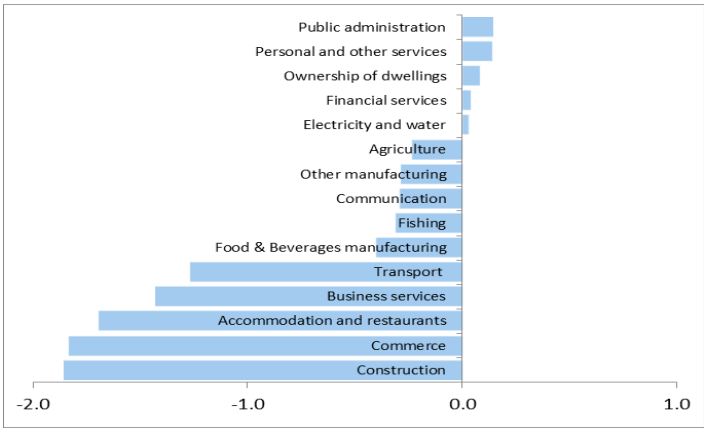
Chart 4: Percentage change in Constant Prices 2016-2020



the year ended December 2019. At this level, GDP per capita was $10,157 decreasing by 9.1% over the year ended December 2019.

In constant 2013 prices, GDP stood at $1868.3 million in the year ended December 2020. On an annual basis, GDP shrank 9.2% over the year to December 2020, the largest annual drop ever recorded since the start of the series.

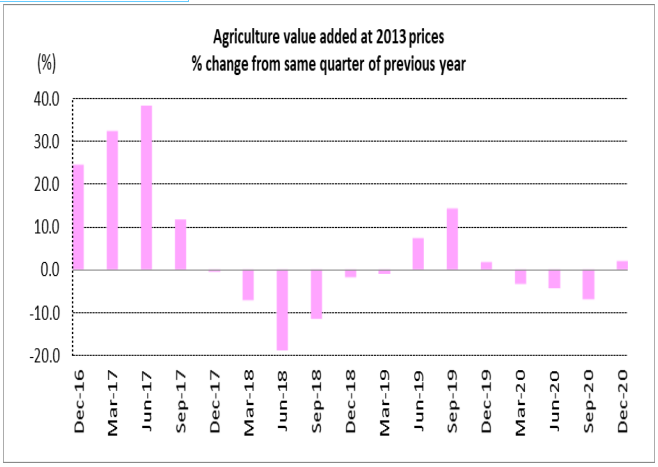
Chart 5: Percentage-point contributions to GDP growth for



Individual Industry Quarterly Performance

AGRICULTURE	GDP Dec 2019 Quarter	GDP Sept 2020 Quarter	GDP Dec 2020 Quarter	% change from Sept 2020 quarter (q-o-q)	% change from Dec 2019 quarter (y-o-y)
Value Added (current prices) WST (millions)	45.6	43.9	45.0	2.4	-1.3
Value added (constant 2013 prices) WST (millions)	40.9	37.9	41.8	10.3	2.2
Contribution to aggregate (y-o-y) real growth rate: *percentage points*	0.2	-0.5	0.2		
Contribution to aggregate nominal GDP: *percent*	8.3	8.8	8.8		

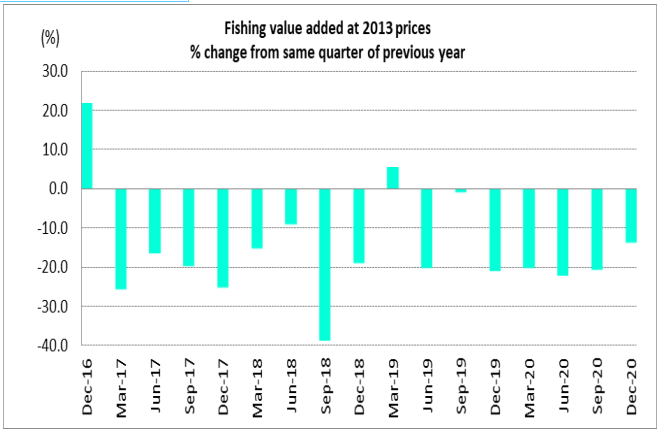
Chart 6: Percentage change in Agriculture real value added; Dec 2016 - Dec 2020



Agriculture total value added at constant prices for the December 2020 quarter amounted to $41.8 million. It increased by 2.2% compared to the December 2019 quarter as both monetary and subsistence agriculture (agricultural production which are used entirely by those responsible for the production) went up by 0.3% and 3.5% respectively. This result reflects the increase of 4.5% in livestock, exported produce up by 16.9%, horticulture increased by 0.6% and the 3.9% increase in non-marketed marketed crops although marketed crops supplied to the markets and stalls around the country declined by 6.2%. The industry's share to total nominal GDP increased by 0.5 percentage-points over the December 2019 quarter.

FISHING	GDP Dec 2019 Quarter	GDP Sept 2020 Quarter	GDP Dec 2020 Quarter	% change from Sept 2020 quarter (q-o-q)	% change from Dec 2019 quarter (y-o-y)
Value Added (current prices) WST (millions)	9.4	9.6	8.9	-7.8	-5.8
Value added (constant 2013 prices) WST (millions)	6.9	6.8	6.0	-11.5	-13.8
Contribution to aggregate (y-o-y) real growth rate: *percentage points*	-0.4	-0.3	-0.2		
Contribution to aggregate nominal GDP: *percent*	1.7	1.9	1.7		

Chart 7: Percentage change in Fishing real value added; Dec 2016 - Dec 2020



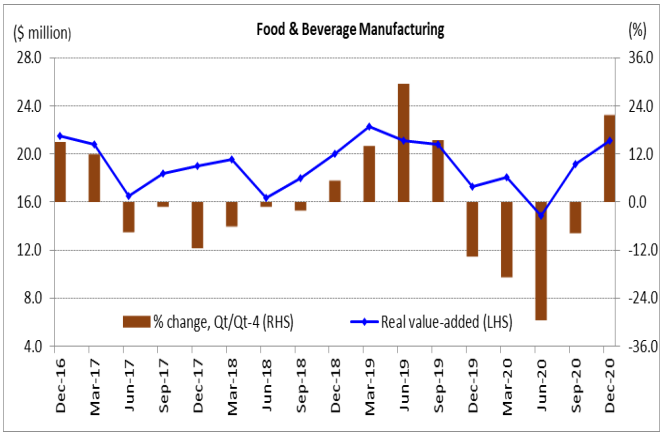
Fishing decreased by 13.8% compared to the corresponding period in 2019 and also declined by 11.5% compared to the September 2020 quarter. The industry continues to deteriorate due to poor weather conditions and has not recorded a single increase since March 2019. The unfavorable performance reflects the notable decline in Exports of fish by 40.5% while Domestic consumption recorded a small increase of 0.8%.

In nominal terms, the industry went down by 5.8% on a year-on-year basis. The industry contributed -0.2 percentage-point to GDP growth in the December 2020 quarter.

Individual Industry Quarterly Performance

FOOD & BEVERAGE MANUFACTURING	GDP Dec 2019 Quarter	GDP Sept 2020 Quarter	GDP Dec 2020 Quarter	% change from Sept 2020 quarter (q-o-q)	% change from Dec 2019 quarter (y-o-y)
Value Added (current prices) WST (millions)	18.3	20.7	24.4	18.1	33.2
Value added (constant 2013 prices) WST (millions)	17.3	19.2	21.1	9.9	21.7
Contribution to aggregate (y-o-y) real growth rate: *percentage points*	-0.5	-0.3	0.7		
Contribution to aggregate nominal GDP: *percent*	3.3	4.2	4.8		

Chart 8: Food & Beverage Manufacturing quarterly value added at constant prices & % change over the same period of the previous year; Dec 2016 - Dec 2020

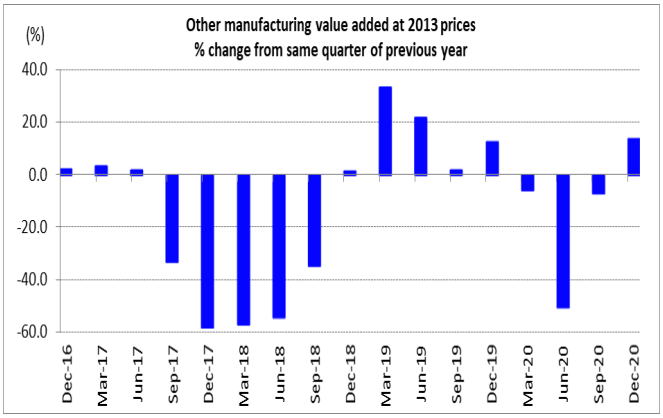


Food and Beverage industry produced a total value added in real terms of $21.1 million in December 2020, increasing by 21.7% in comparison to December 2019. The industry has finally returned to its pre-pandemic levels. This makes it the first quarterly increase for the industry following four consecutive quarters of negative growth as indicated by the Chart. The industry contributed 0.7 percentage-points to the overall real growth in the period.

In nominal terms, the industry also increased by 33.2% compared to the December 2019 quarter. It's share to total nominal GDP went up by 1.5 percentage-point.

OTHER MANUFACTURING	GDP Dec 2019 Quarter	GDP Sept 2020 Quarter	GDP Dec 2020 Quarter	% change from Sept 2020 quarter (q-o-q)	% change from Dec 2019 quarter (y-o-y)
Value Added (current prices) WST (millions)	11.5	12.0	14.1	17.3	22.9
Value added (constant 2013 prices) WST (millions)	9.6	9.5	10.9	14.8	13.4
Contribution to aggregate (y-o-y) real growth rate: *percentage points*	0.2	-0.1	0.3		
Contribution to aggregate nominal GDP: *percent*	2.1	2.4	2.8		

Chart 9: Percentage change in Other Manufacturing real value added; Dec 2016 - Dec 2020



Other Manufacturing recorded a total value added in real terms of $10.9 million in the period under review. It increased by13.4% over the December 2019 quarter as a result of the increase in tobacco production. This follows three consecutive quarters of negative growths. The industry contributed 0.3 percentage-points to GDP growth in the period under review.

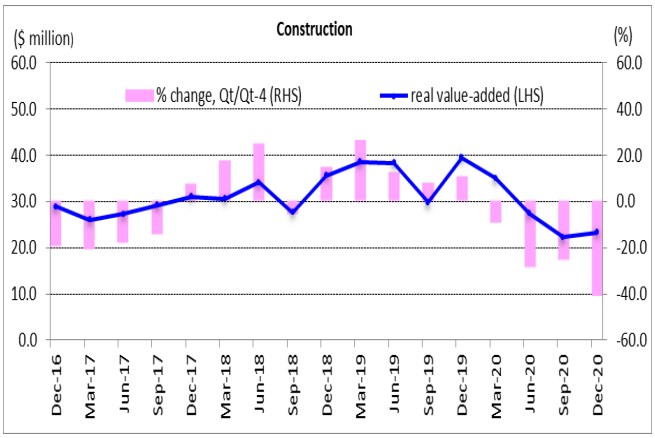
In nominal terms, the industry recorded a total value of $14.1 million, increasing by 22.9% compared to the corresponding quarter of the previous year.

Individual Industry Quarterly Performance

CONSTRUCTION	GDP Dec 2019 Quarter	GDP Sept 2020 Quarter	GDP Dec 2020 Quarter	% change from Sept 2020 quarter (q-o-q)	% change from Dec 2019 quarter (y-o-y)
Value Added (current prices) WST (millions)	41.6	24.4	25.8	5.5	-38.0
Value added (constant 2013 prices) WST (millions)	39.5	22.3	23.3	4.7	-40.9
Contribution to aggregate (y-o-y) real growth rate: *percentage points*	0.7	-1.4	-3.2		
Contribution to aggregate nominal GDP: *percent*	7.6	4.9	5.0		

Chart 10: Construction quarterly value added at constant prices & % change over the same period of the previous year; Dec

Construction recorded a real value added of $23.3 million in the December 2020 quarter, decreasing by 40.9% compared to the December 2019 quarter. The drop in output was attributed to the decrease in construction of residential buildings and heavy & civil construction such as road, bridges and so forth. This was also consistent with the decrease of 26.0% of imported construction materials. Acquisition of fixed assets as reported by the Government Finance Statistics report also declined by 44.6% as a result of the decline in investment in fixed assets. This makes it the fourth consecutive quarter of negative growth and the lowest drop ever experienced by the industry since the start of the series.

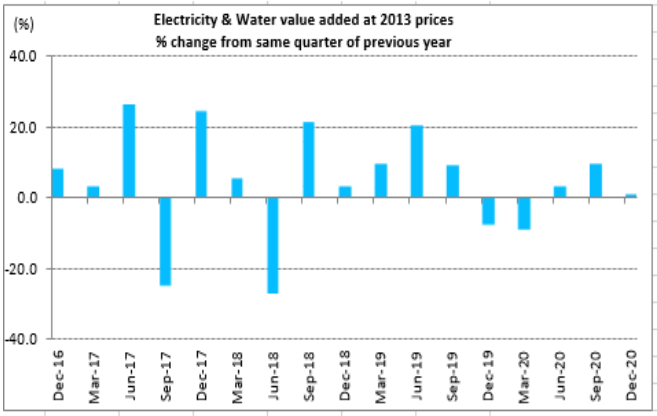


ELECTRICITY AND WATER	GDP Dec 2019 Quarter	GDP Sept 2020 Quarter	GDP Dec 2020 Quarter	% change from Sept 2020 quarter (q-o-q)	% change from Dec 2019 quarter (y-o-y)
Value Added (current prices) WST (millions)	15.9	18.5	16.4	-11.5	3.0
Value added (constant 2013 prices) WST (millions)	14.5	16.7	14.6	-12.5	0.7
Contribution to aggregate (y-o-y) real growth rate: *percentage points*	-0.2	0.3	0.0		
Contribution to aggregate nominal GDP: *percent*	2.9	3.7	3.2		

Chart 11: Percentage change in Electricity &Water real value added; Dec 2016 - Dec 2020

Electricity and Water generated a total value added of $14.6 million at constant prices in the quarter under review, increasing by 0.7% compared to the December 2019 quarter. This was driven by 5.7% increase in water production even though Electricity production declined by 2.4%.

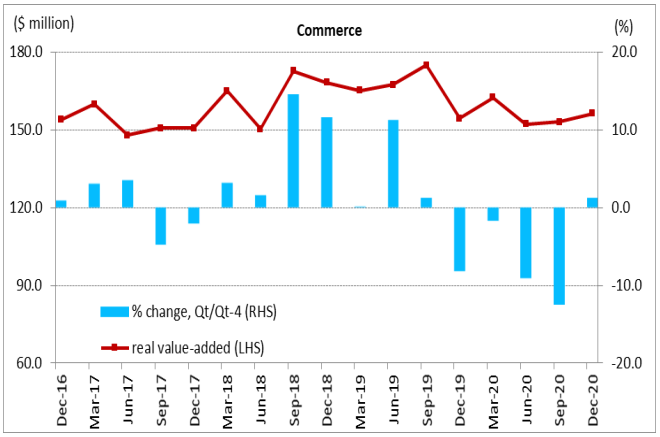
In nominal terms, the industry recorded a value added of $16.4 million, increasing by 3.0% on a year-on-year basis. Its share to total nominal GDP increased by 0.3 percentage-points from 2.9 percent in December 2019 to 3.8 percent in December 2020.



Individual Industry Quarterly Performance

COMMERCE	GDP Dec 2019 Quarter	GDP Sept 2020 Quarter	GDP Dec 2020 Quarter	% change from Sept 2020 quarter (q-o-q)	% change from Dec 2019 quarter (y-o-y)
Value Added (current prices) WST (millions)	165.7	161.0	165.6	2.9	-0.1
Value added (constant 2013 prices) WST (millions)	154.3	153.0	156.4	2.2	1.3
Contribution to aggregate (y-o-y) real growth rate: *percentage points*	-2.7	-4.1	0.4		
Contribution to aggregate nominal GDP: *percent*	30.2	32.4	32.3		

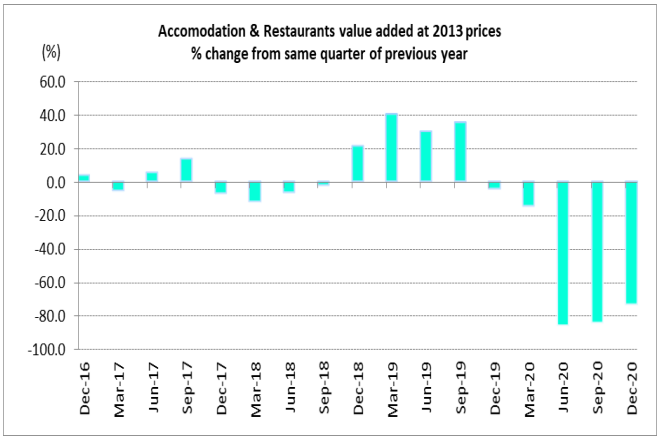
Chart 12: Commerce quarterly real value added & % change over the same period of the previous year; Dec 2016 - Dec 2020



Commerce continues to be biggest industry in the economy holding the largest share of 32.3 percent of total nominal GDP. It's total value added in real terms amounted to $156.4 million for the December 2020 quarter, increasing by 1.3% on a year-on-year basis. The industry also increased by 2.2% when compared to September 2020. This makes it the first increase by the industry following the four consecutive quarters of negative growth. The performance by the industry reflects the increase in retailing and wholesaling activities related to food, stationeries and agricultural equipment. Moreover, remittances recorded an increase of 12.6% for the period under review when compared to the corresponding quarter of 2019.

ACCOMMODATION AND RESTAURANTS	GDP Dec 2019 Quarter	GDP Sept 2020 Quarter	GDP Dec 2020 Quarter	% change from Sept 2020 quarter (q-o-q)	% change from Dec 2019 quarter (y-o-y)
Value Added (current prices) WST (millions)	13.1	3.3	3.9	16.6	-70.5
Value added (constant 2013 prices) WST (millions)	11.8	2.7	3.2	16.8	-73.0
Contribution to aggregate (y-o-y) real growth rate: *percentage points*	-0.1	-2.6	-1.7		
Contribution to aggregate nominal	2.4	0.7	0.8		

Chart 13: Accommodation & Restaurants, percentage change in real value added over the same period of the previous year; Dec 2016 - Dec 2020



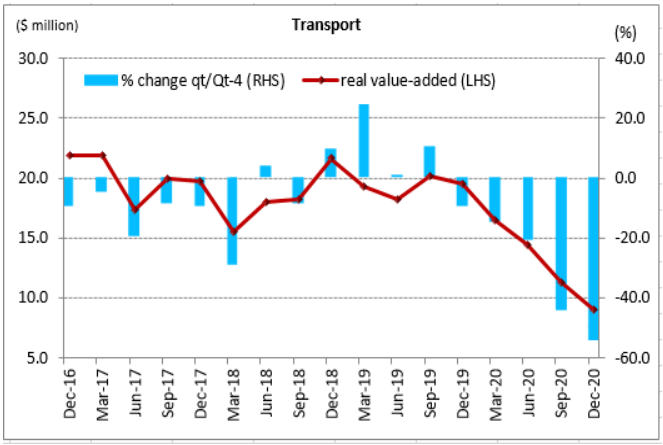
Accommodation and Restaurant continues to decline recording a total value added of $3.2 million in constant prices. It decreased by 73.0% compared to the December 2019 quarter making it the fifth quarterly decline by the industry due to the impacts of the Covid-19 pandemic with boarders remained closed to international tourists for the entirety of the quarter. However, when compared to September 2020, it went up by 16.8% reflecting an easing of activity following a post-lockdown catch up in the previous quarters. The industry's contribution to GDP growth was –1.7 percentage points. Its share to total nominal GDP continues to decline recording 0.8 percent in the period.

Individual Industry Quarterly Performance

TRANSPORT	GDP Dec 2019 Quarter	GDP Sept 2020 Quarter	GDP Dec 2020 Quarter	% change from Sept 2020 quarter (q-o-q)	% change from Dec 2019 quarter (y-o-y)
Value Added (current prices) WST (millions)	20.9	12.0	9.5	-21.5	-54.8
Value added (constant 2013 prices) WST (millions)	19.6	11.3	9.0	-20.2	-53.9
Contribution to aggregate (y-o-y) real growth rate: *percentage points*	-0.4	-1.7	-2.1		
Contribution to aggregate nominal GDP: *percent*	3.8	2.4	1.8		

Chart 14: Transport quarterly growth rates with total value added at constant 2013

Transport recorded a total value added in real terms of $9.0 million for the December 2020 quarter, the lowest ever recorded by the industry in the history of National Account. It declined by 53.9% on a year-on-year basis, also the biggest decline recorded by the industry since the series begun. It also declined by 20.2% when compared to the September 2019 quarter. Air transport decreased by 92.0% mainly due to the closure of borders. Land and sea transport both decreased by 41.6% and 10.6% respectively. The decline in land transport was driven by the decrease in activities related to warehousing, storage and cargo handling. It contributed –2.1 percentage points to the overall GDP growth with a share of 1.8 percent to total nominal GDP.

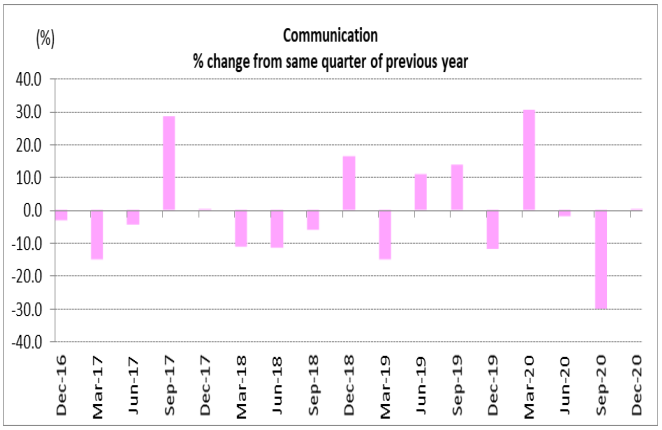


COMMUNICATION	GDP Dec 2019 Quarter	GDP Sept 2020 Quarter	GDP Dec 2020 Quarter	% change from Sept 2020 quarter (q-o-q)	% change from Dec 2019 quarter (y-o-y)
Value Added (current prices) WST (millions)	36.9	32.9	34.1	3.4	-7.7
Value added (constant 2013 prices) WST (millions)	31.8	30.0	31.8	5.9	0.0
Contribution to aggregate (y-o-y) real growth rate: *percentage points*	-0.8	-2.4	0.0		
Contribution to aggregate nominal GDP: *percent*	6.7	6.6	6.6		

Chart 15: Communication percentage change in real GDP from the same quarter of the previous year, Dec 2016 - Dec 2020

Communication total value added amounted to $31.8 million in constant prices. It slightly went up compared to the corresponding quarter of the previous year. This follows two consecutive quarters of negative growths. The performance during the period under review reflects the rising demand for communication services and digital infrastructure in the face of the pandemic-triggered lockdown.

The industry's total value added in current prices went down by 7.7% of a y-o-y basis, dropping its share by 0.1 percentage-points.



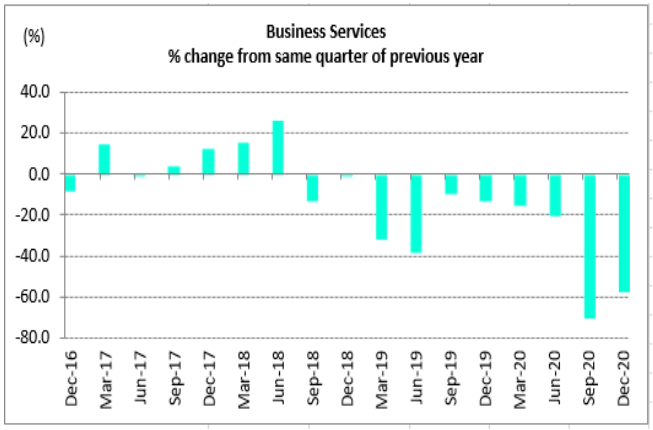
Individual Industry Quarterly Performance

BUSINESS SERVICES	GDP Dec 2019 Quarter	GDP Sept 2020 Quarter	GDP Dec 2020 Quarter	% change from Sept 2020 quarter (q-o-q)	% change from Dec 2019 quarter (y-o-y)
Value Added (current prices) WST (millions)	19.3	5.5	8.6	56.7	-55.3
Value added (constant 2013 prices) WST (millions)	19.8	5.4	8.5	56.9	-56.9
Contribution to aggregate (y-o-y) real growth rate: *percentage points*	-0.6	-2.3	-2.2		
Contribution to aggregate nominal GDP: *percent*	3.5	1.1	1.7		

Chart 16: Business Services, % change in value-added at constant 2013 prices from

Overall, business services produced a total value added of $8.5 million at constant 2013 prices in the December 2020 quarter, dropping by 56.9% on a y-o-y basis. It contributed -2.2 percentage points to the overall growth with a share of 1.7% to total GDP.

The fall in the quarter was attributed to travel restrictions due to the COVID-19 which led to the decline in travel related activities such as travel agencies, tour operators, travel-related reservation services such as activities of tourist guides, tourism promotion activities and so forth. Real estate activities also declined by 50.3%. However, Professional services increased on a y-o-y basis.

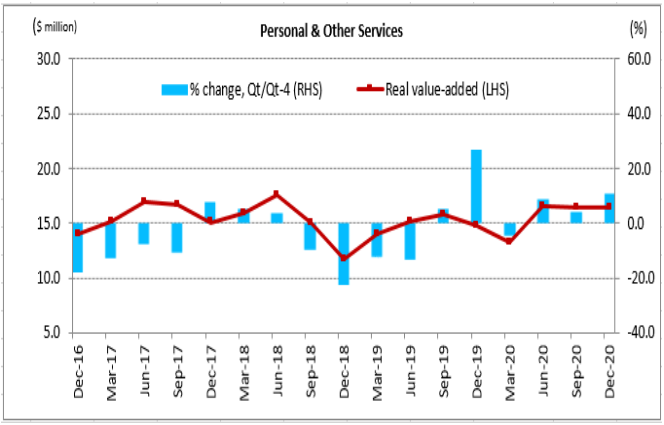


PERSONAL & OTHER SERVICES	GDP Dec 2019 Quarter	GDP Sept 2020 Quarter	GDP Dec 2020 Quarter	% change from Sept 2020 quarter (q-o-q)	% change from Dec 2019 quarter (y-o-y)
Value Added (current prices) WST (millions)	15.7	16.4	16.6	0.9	6.0
Value added (constant 2013 prices) WST (millions)	14.8	16.5	16.4	-0.5	10.8
Contribution to aggregate (y-o-y) real growth rate: *percentage points*	0.6	0.1	0.3		
Contribution to aggregate nominal GDP: *percent*	2.9	3.3	3.2		

Chart 17: Personal & Other Services quarterly value added at constant prices & % change over the same period of the previous year; Dec 2016 - Dec 2020

Personal & other services total value added in constant 2013 prices for December 2020 amounted to $16.4 million. It increased by 10.8% on a y-o-y basis. This was due to the increase in the provision of post-secondary non tertiary and tertiary education.

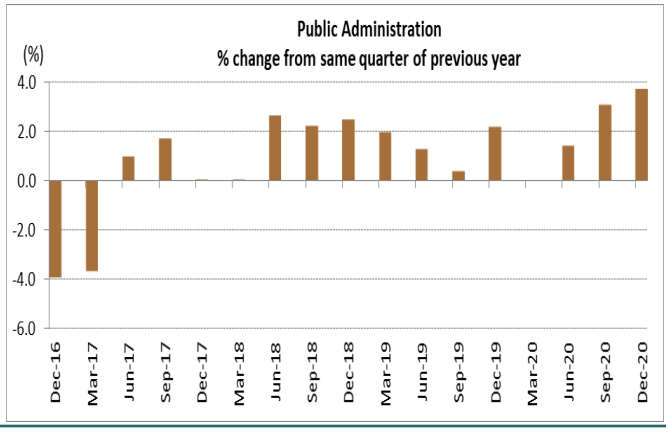
In nominal prices, the industry generated a value added of $16.6 million also experiencing an increase 6.0% on a y-o-y basis with a share of 3.2 percent to the total nominal GDP.



Individual Industry Quarterly Performance

PUBLIC ADMINISTRATION	GDP Dec 2019 Quarter	GDP Sept 2020 Quarter	GDP Dec 2020 Quarter	% change from Sept 2020 quarter (q-o-q)	% change from Dec 2019 quarter (y-o-y)
Value Added (current prices) WST (millions)	47.6	56.0	57.2	2.1	20.2
Value added (constant 2013 prices) WST (millions)	37.0	37.6	38.3	2.0	3.7
Contribution to aggregate (y-o-y) real growth rate: *percentage points*	0.2	0.2	0.3		
Contribution to aggregate nominal GDP: *percent*	8.7	11.3	11.1		

Chart 18: Public Administration, % change in value-added at constant 2013 prices from Dec 2016 - Dec 2020

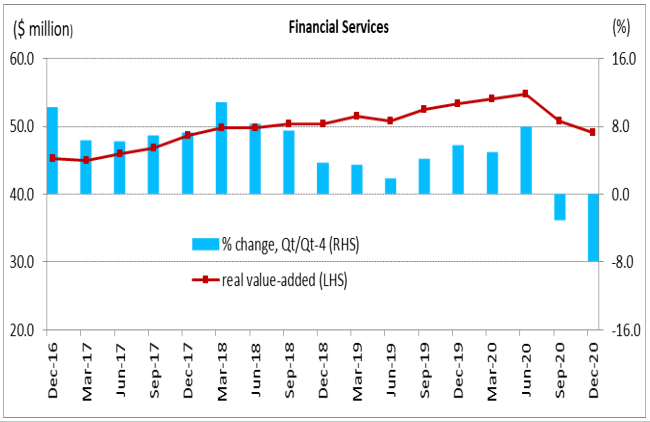


Public administration went up both on a quarter-on-quarter and year-on-year basis by 2.0% and 3.7% respectively. The industry recorded a value added of $38.3 million at constant 2013 prices. It contributed 0.3 percentage points, one of the few industries which contributed positively to overall growth. Its share to total GDP increased from 8.7% in December 2019 to 11.1% in December 2020.

The performance by the industry reflects the increase in both compensation of employees and employment in the industry.

FINANCIAL SERVICES	GDP Dec 2019 Quarter	GDP Sept 2020 Quarter	GDP Dec 2020 Quarter	% change from Sept 2020 quarter (q-o-q)	% change from Dec 2019 quarter (y-o-y)
Value Added (current prices) WST (millions)	53.7	48.6	51.1	5.1	-4.8
Value added (constant 2013 prices) WST (millions)	53.3	50.8	49.1	-3.4	-7.8
Contribution to aggregate (y-o-y) real growth rate: *percentage points*	0.6	-0.3	-0.8		
Contribution to aggregate nominal GDP: *percent*	9.8	9.8	9.9		

Chart 19: Financial Services value added at constant prices & % change over the same period of the previous year; Dec 2016 - Dec 2020



Financial services was down by 7.8% in the December 2020 quarter recording a real value added of $49.1 million. This makes it the second consecutive quarter of negative growth by the industry. The performance by the sector was driven by the decline in activities of monetary institutions other than the central bank such as banks, credit unions etc.

In nominal terms, the industry recorded a decrease of 4.8% compared the December 2019 quarter. Its share to nominal GDP increased by 0.1 percentage-points as a result of the decline in the other industries share to GDP.

NATIONAL ACCOUNTS FRAMEWORK REVIEW & GDP 2013 REBASING

Background Information

INTRODUCTION

The compilation of national accounts statistics is a dynamic process, and therefore needs to adapt to reflect a variety of measures and indicators consistent with developments and structural changes in the economy over a period of time. It is therefore expected that revisions and updates are made to the historical series on a quarterly or annual basis as new data sources are brought into the model and as various benchmarks and assumptions are validated and updated.

This quarterly report is the ninth of the new quarterly series of GDP estimates at constant 2013 prices. This report is an ongoing publication and can also be downloaded from our website www.sbs.gov.ws.

ABOUT GROSS DOEMSTIC PRODUCT

Gross domestic product (GDP) is Samoa's official measure of economic growth. GDP is compiled and published using the ***production approach,*** *this approach measures the total value of goods and services produced in Samoa, after de-ducting the cost of goods and services used in the production process. This is also known as the value-added approach.*

Broad industry groups: *The GDP tables attached to this report follows the broad groupings based on the International Standard Industry Classification (ISIC) Revision 4. Classification of economic activity is important in the determination of the extent and nature of the information collected and the quality of the data compiled.*

- *primary industries (agriculture and fishing)*
- *secondary sector or the goods-producing industries (manufacturing, construction, electricity & water);*
- *Tertiary sector or service industries (wholesale trade; retail trade and accommodation; transport, postal, and warehousing; information media and telecommunications; finance and insurance services; rental, hiring, and real estate services; professional, scientific, technical, administrative, and support services; public administration and safety; education and training; health care and social assistance; arts, recreation, and other services).*

REVISIONS

This publication incorporates revisions to estimates of value added for Personal & other services in December 2019 and March 2020 quarters, Fishing in March, June and September 2020 quarters and Financial services in June and September 2020 quarters due to the availability of the latest available data from data providers; revised data are highlighted on the attached tables.

The GDP numbers for the recent quarters are subject to revisions in the next publication pending the availability of revised numbers from the sources.

Samoa Bureau of Statistics

SBS Vision:
"To strengthen Statistical services for the development of Samoa"

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Background Information

Overview

This publication is the eighth release for estimates of GDP at constant (2013) prices. In the process of updating the base year from 2009 to 2013 the overall estimation system has been exhaustively reviewed, leading to improved methodologies and the adoption of a range of new data sources and revised benchmarks wherever available. The revised overall estimates have not resulted in significant changes to the picture of the Samoan economy presented by the earlier 2009-based estimates, but it is believed that the revised system is more robust, and will be better able to quickly reflect future disturbances to economic growth. The section below on "General reasons for rebasing estimates at constant prices" sets out the purpose of rebasing estimates, and the nature of the processes involved.

The key features of the overall system review and associated rebase are as follow:

- *base year for constant price estimates was updated from 2009 to 2013*
- *ISIC classification have been upgraded from the ISIC Revision 3.1 to Revision 4 as recommended in the SNA 2008*
- *an increased reliance on summary data from the VAGST system*
- *the incorporation of latest benchmarks, including*
  - *⇒Household Income and Expenditure Survey, 2013*
  - *⇒Business Activity Survey, 2013*
  - *⇒Population Census, 2016*
  - *⇒Financial data on the Financial Sector operations*
  - *⇒information from other sources, particularly for Government Finance Statistics, Merchandise trade, Employment and Wage data; SNPF, Commodity prices from CPI, Agriculture volume data, visitor arrivals by purpose, livestock production, and landings of in-shore and off-shore fishing catch.*
- *more detailed data on industry level have been incorporated hence provide benefits for the detailed analysis, with results only at the aggregated industry level*

General reasons for rebasing estimates

When interpreting movements over time in broadly-based indicators such as GDP, the effects of changing prices make it difficult to see the "real" changes i.e. what would the changes have been if there had been no change in the component prices? If dealing with a single commodity e.g. sales of taro, it is possible to simply look at the quantities sold, and say with some confidence that "real" sales of taro are going up, down, or are flat.

But with an aggregate as complex as GDP, commodities such as taro, long-line tuna catch, road building, haircuts and financial services are all intermingled, and it is not possible to immediately see the changes in the overall "quantity" of production. In order to aggregate such diverse commodities, it is necessary to express the underlying flows in terms of the prices of a single period (the "base year"). By expressing the detailed flows in monetary terms and at the price of a single period, they can then be aggregated, and the resulting aggregate values of diverse items can then be analysed for the direction and extent of their change "at constant prices".

*This process of valuing the production of detailed commodities at constant prices and then aggregating them is – in principle - directly analogous to the way in which the Consumer Price Index (CPI) is compiled. Whereas the CPI measures **prices** of detailed commodities over time and then weights those prices together by their base-period values to derive an aggregate measure of price, the derivation of constant price estimates measures detailed **quantities** over time and then weights those quantities together by their base-period values to derive an aggregate "quantum" measure.*

Just as the CPI is rebased regularly, there is a further analogy between the compilation of the CPI and the necessity to rebase measures at constant prices. As noted in international recommendations:

"....over time the pattern of relative prices in the base period tends to become progressively less relevant to the economic situations of later periods to the point where it becomes unacceptable to continue using them to measure volume changes from one period to the next. It is then necessary to update the weights."

Methodological changes associated with the review of the system for estimating GDP at current and constant prices

As an integral part of the rebasing to 2013 prices, all benchmarks, assumptions and data sources were evaluated to see if they could be improved. In addition to changes due to the adoption of a more recent base year, the estimates of GDP and its components have been affected by improvements throughout the estimation system.

Revised benchmarks

*It is not practicable to undertake all major data collections in every period eg, the work required to conduct and process a national HIES, Business Activity Survey means that conducting these surveys every 5 years as Samoa has been doing is a major achievement. As a result it is often necessary to use **partial indicators** for extrapolating benchmarks, and the quality of the resulting estimates depends on the assumption that the relationship between the indicator and the benchmark remains constant over time.*

When benchmarks are then derived for subsequent periods it is often the case that the relationship between indicator and benchmark has changed, and this leads to revisions between the benchmark periods and into the period before the next benchmark revision. As a specific example of how this can impact on the estimates, when the recent rebasing was conducted in 2013 there was insufficient information on the financial services available to the Bureau to actually reflect the financial services contribution to the economy. This leads to this component of GDP remained low until the detailed information was made available from the CBS during the 2013 rebase estimates. The more detailed information at a subsector level in financial service as well as insurance revealed that there had been strong growth in the sector over the years with its level substantially increased compared to the 2009 series.

Fortunately, the major strengthening of the national statistical system during the last decade has led to a breadth of experience in the use of administrative data sources that are available to supplement censuses and surveys, and more effort is put into strengthening cooperation and coordination amongst the data users and data providers. Furthermore, resources are being allocated to permit more regular data collections than was the case a decade or more ago. As a result, 2018 HIES enumeration is completed, Agriculture Census will be conducted in early 2020 with more developments into the integration of businesses administrative data to facilitate timely and less costly collection on the Business Activities. It is anticipated that future rebases and systems reviews will be far less subject to revision due to benchmarks becoming very much out of date.

Improved national statistical system:

Any system for estimating GDP is basically a framework for bringing together a wider range of economic and social statistics. The quality of the resulting estimates will be directly dependent on (a) the quality of the component systems, and (b) the extent to which the components are integrated eg, common definitions and classifications. In reviewing the latest system for estimating GDP it was evident that the national statistical system is far more robust and better integrated than it was a decade ago despite challenges

A key example of better integration is that businesses paying VAGST and NPF contributions are now classified to the same industry in both systems – as a result the average earnings measures by industry from NPF data can now be confidently related to the estimates of output by industry from VAGST data, and so provide a directly relevant measure of labour costs associated with that industry output. Other activities to improve this integration further is continuing; with the development of an Integrated Business Information System developed and housed in the Bureau, with data sharing amongst Government Ministries and Corporations like Ministry for Revenue, Ministry of Commerce Industry and Labour as well as National Provident Fund.

Ministry of Agriculture and Fisheries have been supportive during this rebase exercise with the electronic transfer of fishing data especially the inshore and off-shore data, a great example of a statistical system with strong cooperation.

With the general improvements in the quality of the national statistical system (which includes agencies other than SBS) the need to adjust source data for obvious outliers has been significantly reduced. When the first system was established there were many series which regularly showed unrealistic fluctuations: some were monitored manually, others were so consistently unreliable that automatic checks were built in to keep them within set limits. While the latest system still features some moving averages to allow for known timing problems (eg, 7 paydays in one quarter, 6 in the next) the source data now stand on their own merits. Not only is the revised system now drawing on better quality component data, but it will also be able to more quickly reflect turning points and the effect of shocks such as cyclones.

New classification— ISIC Revision 3.1 to Revision 4

In compliance with international best practice, one of the major developments was the re-classification of business by the nature of business activities using the ISIC Rev.4 from Rev.3.1 previously used. This is a significant activity in assuring that Samoa's data is comparable to other countries economy, as well in its relation to other systems like Balance of Payments and Government Finance Statistics. This has impacted on the value added levels of some industries like Construction and Business Services; with some establishments that were involved in architectural consultancy more on the services being previously classified under construction but are now in the business services—under architectural and engineering consultancy services.

Methodological changes:

The general methods remain largely unchanged between 2009 and 2013 except for the opportunity to refine and improve the system as well as incorporation of the new benchmark data from the major surveys.

***Agriculture:** The general methods remain largely unchanged between 2009 and 2013 except for the opportunity to refine and improve the factors that were used in the estimation of the marketed commodities. This was related to the change in coverage of the market survey which previously covers the Fugalei market only, and now expanded to cover other markets and stalls around the islands including the main market in Savaii. The single biggest influence on the change in movements*

between the two systems was the introduction of the 2013 HIES benchmarks, and this resulted on 2013-based estimates being lower in 2013 compare to the (2009) previous series.

Fishing: *Fishing like Agriculture methods remain largely unchanged except for the introduction of the HIES 2013 data as well as the use of the in-shore and off-shore survey data from the Fisheries Division of the Ministry of Agriculture and Fisheries in the system.*

Industries which rely on VAGST data:

Benchmarks from the Business Activity Survey 2013 were considered and adjusted accordingly, in light of the coverage in the BAS for some industries and in comparison with VAGST data.

In many ways the VAGST system is a nearly ideal indicator for measuring value added in many industries:

- *its scope is "value added", the same concept as underlies GDP;*
- *it is a sub-annual system, with timely reporting;*
- *returns are monitored closely to ensure compliance;*
- *good working relation with MfR mean that SBS industry coding is being applied;*
- *its coverage spans the non-agricultural monetary side of the domestic economy.*

As such the VAGST system provides regular, reliable aggregate data for the key items: sales, and purchases. If VAGST did not exist it would require a major (to the point of being impracticable) on-going business survey, at huge cost to both SBS and the reporting business community. Inevitably the results from the VAGST system have been adopted as the primary data source for many industries.

The industries which use only VAGST results in estimating the current price values (CPVs) of monetary value added for that industry are:

- *OTHM Manufacturing other than food and beverages*
- *ELEW – but only the water component, and this will change if we can get good data directly from SWA (water is in VAGST, electricity is not)*
- *TRAD Commerce*
- *COMM Communication*
- *BUSS Business Services*
- *PERS Personal services*
- *OTHR Other services*

Industries which use VAGST as the primary data source for monetary CPVs but supplement these with data from other sources are:

- *FOOD Food and beverage manufacturing (+ exports)*
- *CONS Construction (+ building material imports as additional indicator);*
- *TSPT Transport (+ estimates for buses and taxis outside VAGST)*

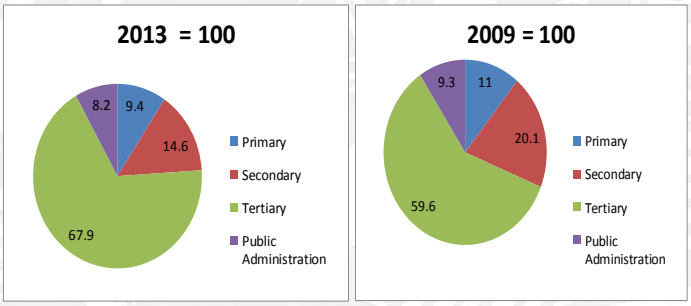
Apart from these VAGST based industries, The Finance Industry main data source is now primarily from the Profit and Loss Statement summary provided by the Central Bank of Samoa. This not only enables the calculation of the FISIM, but also the breakdown of other components of the Finance Sector like Insurance, Central Bank and Other financial institutions.

Impact of the revised estimates on the economic structure and growth

The combined effect of the rebasing to 2013 prices, revising methodologies and data sources remained unchanged at the aggregated level. However the revised benchmarks as expected led to changes in the value added composition of industries, as well as year on year growth rates. The change saw the Tertiary sector share increased by 8.3 percentage point with Secondary, Primary and the Public Admin sector loosing 5.5, 1.6 and 1.1 percentage points respectively.

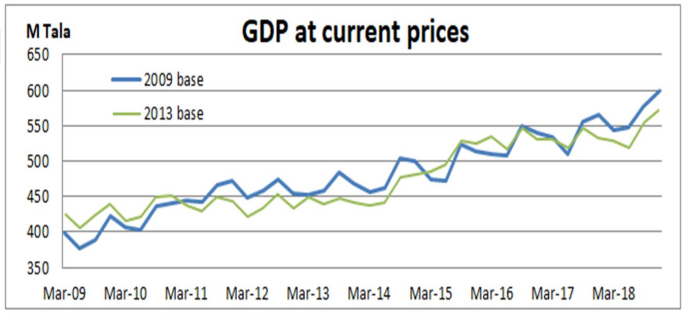
Underpinning the change was the Finance sector becoming the second largest industry after Commerce, with Construction moving to sixth and Other Manufacturing to be the smallest in 2018 with 1.8 percent share. The trend is indicative of the changes occurred in the period from 2009 to current with the completion of some major infrastructural projects as well as the effect of the closure of Yazaki in August 2017. Public Administration, Agriculture and Communication sectors were in the 2nd, 3rd and fourth in the ranking .

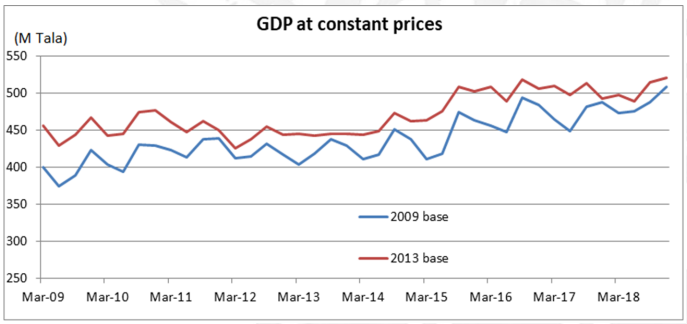
Comparison of GDP shares 2018, by broad sectors in 2013 and 2009 prices,

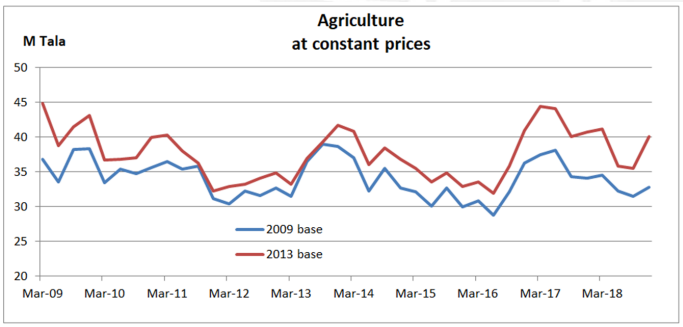


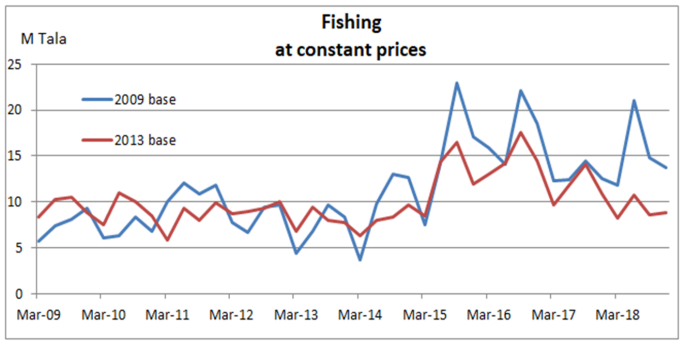
Indicated in the following charts are the industries showing significant change as part of the rebasing exercise:

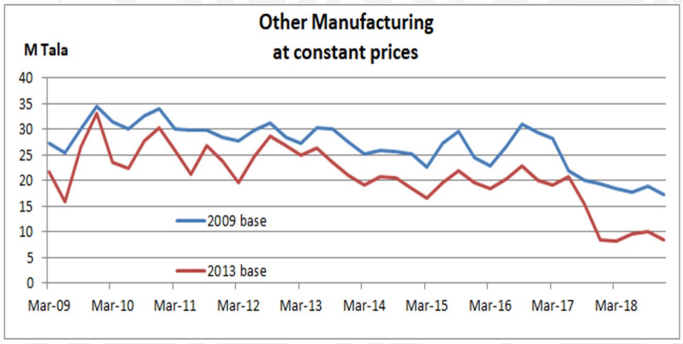
Some of the key results for GDP at current and constant 2013 prices compared to 2009 prices;

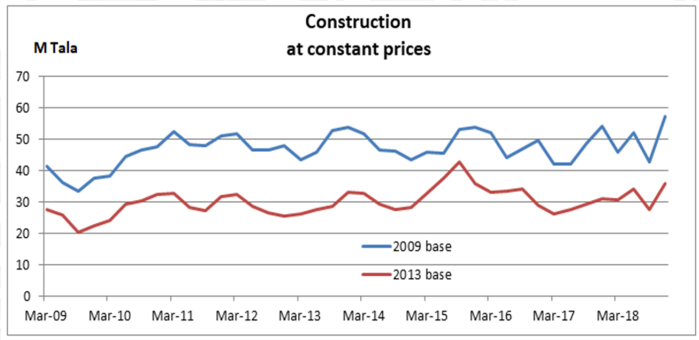




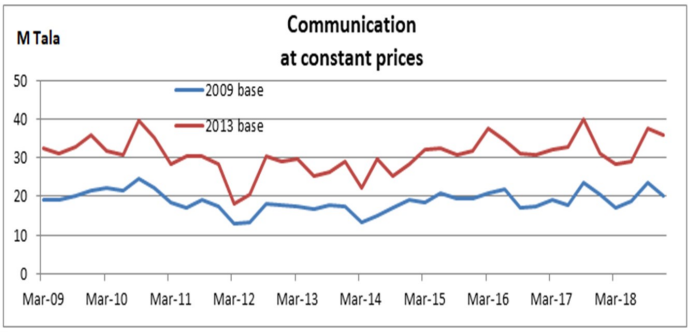


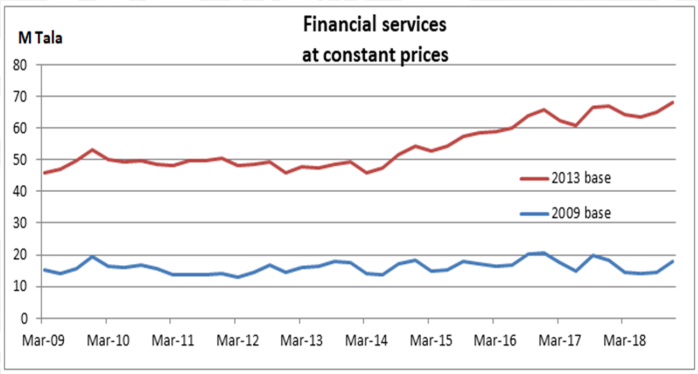






The gap between the two base periods for the Construction and Other Manufacturing reflects the change in the level of activities in the two periods, with 2013 having a lower end compared to 2009. On the other hand Communication indicated that there have been more activities in the 2013 period compared to 2009.





The gap between the two base periods for the Financial services reflects the change in the level of activities in the two periods, with 2013 having a higher value of activities compared to 2009. This also attributed to improved data sources used for this industry compared to the previous data set.