New Ways of Financing Government and People

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Different payment means started from early human age existence in form of goods, wheats, gold and developed in China as coins or Babilon as Interest rates.

Today the world has access to diverse types of financing opportunities and reaches the global market by satellite and computers.

Although technology improved real quality connections between personal finance, government finance and corporate finance are lingering in their own aims and advantages. Quality linking is a message that needs to be done and accomplish measuring constant statistical data and making comparison of growth, interest levels, inflation rise with human advancement- free medical free schooling, secure pension, corporate responsibility growth with environmental protection and government responsibility – providing diversify jobs and increase in standard of all people.

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0. HISTORY OF FINANCE AND MEANS OF PAYMENTS

Money, as a means of trade, was developed to make our desire or bare need in exchanging goods and services possible.

When we talk about financial systems nowadays, we clearly need to turn back and see some historical steps that have already been taken.

Some people or economist wight much measure on difference between money and currency explaining that money is an item on which we allocate numbers and currency is a physical commodity that we can take, smell, trade: like coins, banknotes, paper cards, credit, debit cards etc.

When we talk about money, we usually refer to the exchange rate when we can change value for something else in monetary terms.

Our financial world started a long history ago. When it was needed for people to trade grains they allocated value on it. Slow grains and cattle were replaced by metals such as gold and bronze.

The first financial system was also developed in the early stages of known history. Bank type organization developed around 3000 BC in Asia where grains and valuables were stored in temples or rich palaces and used as exchange commodities.

Around the same time cradle of civilization Mesopotamia developed an additional system of lending and the first interest was developed in town Uruk by Sumerians.

The first written document that includes laws that govern bank operation was done by the Code of Hammurabi around 1792 BC. At that time Babylonian used 20% interest on lending goods.

China used term money by introducing in 1.200 BC cowrie shells, and around 700 BC they used coins that represented money as such.

The Lydians had started to use coin money more widely and opened permanent retail shops. In times of Julian Caeser interest was 12% and under Justian downsized to range 8%-4%. The first paper money was introduced by Yuan dynasty in China in 1260. This was reported by Marco Polo who talked about various denominations of money.

Much recently developments include the first Exchange center introduced by Belgium in 1531 and popular Stock Exchange in London 1773 or New York Stock Exchange1793.

We observe recent modern developments primarily by using faster computers, smart phone transfers, derivative money, cloud money, new currencies and trade alliances that fight their way of trade or innovation on the market.

But still in modern times we remember all since today we experience not simply good for good trade, market to market but all the various kinds of trade that history can remember.

Finance in its broader sense means understanding usage of money to create reports and increase value of assets by making diverse types of liabilities on its way. We still produce valuable goods and services but need to distribute around world what is possible with means of transportation and allocate goods to those who are willing to pay or enjoy their value.

Based on the scope of finance we can divide three to four huge areas of work:

1.Personal finance

2.Corporate finance

3.Public finance

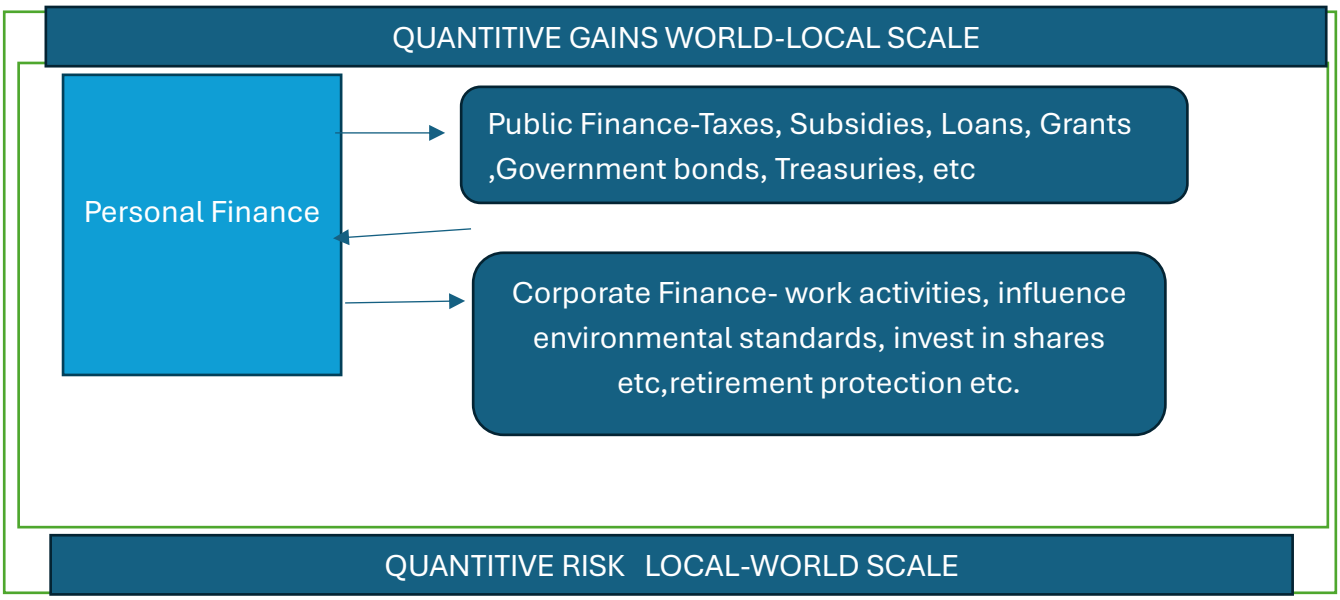
We can also add to this group the possibility of a big new area of finance that measures and connects all three inside countries or on a world scale. Put a name on it:

4.Quantitative finance or innovative finance

Today we do not exchange our goods or services, only relaying end bargain by money value today. We need to be familiar with interest, bonds, credits, shares, loans, options, futures, insurance, stocks etc. Man, main target today is quantifying all risks and minimizing them. Volatility comes with spreading interest, exchange, wars, bankruptcy, goods over or under supply, transport costs and all are under scrutiny of financial investors or analyst throughout the day.

So, common trade is not only about money and exchange but of economics in a broader sense, trade agreement, bank deals, quantitative analysis, predictions and forecasts, viabilities, stability, law, engineering, and technology.

As we have mentioned there are four major groups of finance, but they are all interrelated to each other.



A. Personal Finance

Personal finance refers to the situation of having a personal budget and managing it.

It is a natural order since you need first to ensure your own needs and then to increase obligations and possible new gains in personal welfare equation. As in this type of situation you need to cover needs and ensure minimum or reasonable risk level to obtain wanted capital such as housing, clothing, school, etc. With personal finance you pay your monthly bills, car, insurance, education, coarse loans, and invest in durable long-term or short-term survival needs. In your operation you need a source of funds and transferer of this fund a such as bank, you need to have in certain cases insurance company that increase your security of obtaining results. The source of funds is public or corporate base, or your own retirement fund that is situated by bank or investment company insured by certain extent by government.

Questions and problems that arise in your own small personal finances can be as follows and they need to be dealt with by you.

Number	Personal Finance
1.	How to protect yourself against unexpected events – insure yourself
2.	Know your rights to obtain subsidies grants
3.	Know your obligations regarding taxes
4.	Know your obligations regarding pension fees, medical fees
5.	Understanding how loans influence your current future budget
6.	Understanding what investment in treasuries, bonds, stock market- how you face risk or have benefits
7.	Having saving account and how that influences your future budget regarding inflation or future security
8.	Preparing retirement through various kinds of investment
9.	Investing in environmentally clean energy or support such groups
10.	Having financial plans for large purchases such as auto, house, university fee, leasing possibilities etc.

These issues are answered through experience, education, and information on different levels such as corporate or government information pages. Many non-profit services also spread news about possibilities. But no information on the local world scale can guarantee your own personal wellbeing exist.

B. Corporate finance

Corporate finance deals with the actions that managers take to increase the value of the firm to the shareholders, make sure that the sources of funding are long lasting and stable and the capital structure of corporations is without risks. They use proper financial tools and analysis to allocate financial resources at the right maximum benefit rate.

Financial management is closely related to corporate finance or business finance and many people use this term, but corporate finance is aimed at corporation and not all financial problems and that need to be stressed once more.

Typically, "corporate finance" relates to the *long term* objective of maximizing the value of the entity's assets, its stock, and its return to shareholders, while also balancing risk and profitability. This spreads into three primary areas:

1. Capital budgeting: selecting which projects to invest in—here, accurately determining value is crucial, as judgements about asset values can be "make or break".
2. Dividend policy: the use of "excess" funds—these are to be reinvested in the business or returned to shareholders.
3. Capital structure: deciding on the mix of funding to be used—here attempting to find the optimal capital mix re debt-commitments vs cost of capital.

The latter creates the link with investment banking and securities trading, as above, in that the capital raised will generically comprise debt, i.e. corporate bonds, and equity, often listed shares.

Although history is full of large successful corporate entities, and many of the best schools in the world teach corporate management and its finances, we still do not have golden rules or guarantee of success. Problems with the ground are seen among the following questions:

Number	Corporate Finance
1.	Capital budgeting. Have capacity or knowledge to establish difference among different types of investment possibilities, make or break courage, judgment about current future market needs
2.	Dividend policy- the right amount of dividend paid to shareholders, not to sell shares, but to continue with future share options -have mutual trust with owners- build on that, over under payment issues and related problems
3.	Capital structure- Knowledge to measure financial reports making analysis respectful, and not passing red line in debt/capital ratio; having proper asst liability structure have for purpose right amount or risk reward on current future market, act proper in times of deep crises
4.	Have the right link to bank institutions who provide saving, or investment opportunities, not following bank interest but its own strategy
5.	Have insurance of possible large calamities in transport production market not paying for nothing but be insured
6.	Having potential to rise over short- or long-term obstacles developing the right approach to problem
7.	Having good relations with local communities charging proper standards in social, sport, environment. Behavior pattern and relation that is not cosmetic empty advertisement but real help-not acting as actor but act as real help
8.	Having good standards with employees, explaining them rights and obligations, offering help, giving opportunities to increase salary with increased effort, offering possibility additional retirement benefits, medical support etc.
9.	Having a pattern of communication with the government to work on possible business opportunities or reduce risk in business operations
10.	Following rules of modern finance and market opportunities in that way staying in the market longer like mobile phones, robots, computers used, mobile offices, work at home etc.

Source: Wikipedia.org

Since there are still large number of companies in bankruptcy, or unaware of financing possibilities, or using wrong strategy regarding any of potential associates in this field although studied a lot is still place of developments and possible progress.

C Public finance

Public finance is related to financial opportunities in state, sub national parts and is related to agencies and institutions. They are providers of long-term strategies of nation and servs as motor to many projects further. They also play an important role in keeping stability and providing social help for on that where in need.

They work through strategic thinking legislation, incorporate decisions on the local level such as tax rates, and distribution of their own budgets.

Thes also serve as one who are active players on the money market issuing government bonds and treasures.

Budget process is more complicated than in personal budget case. But although they have easier access to resources such as unlimited tax opportunities this is not without consequences. Overburdening populations can be counterproductive, and business can move further. Budget needs to be transparent, what is often the case of party preferences or strengths, not real public interest.

Questions related to this type of financing go as:

Number	Public Finance
1.	Long term strategy in each significant field on transparent understandable way exist or not
2.	Incorporate tax policy in line with possibilities do not overburden population or companies since run away will bring lowering future resources
3.	Clear states expectations and aims regarding obligations rights, willing to cooperate and offer help and support
4.	Budget transparency
5.	Issuing government bonds- transparency, price gains relation to market
6.	Making large infrastructure in line with possibilities and expectations of majority of people
7.	Ensuring energy stability
8.	Ensuring environmental standards are in line with local and world policies and expectations.
9.	Aware of all expenditure on its own system and future costs
10.	Relation of different finance possibilities

Source: Wikipedia.org

Although questions and hopes are clear to all we still see governance struggling to be in line with people's expectations and they are lower national standards while keeping major groups parties or main finance contributors to be users of available resources. Change in structures or view can bring perturbances where is needed or not, continue with established wrong standards, make additional costs to society etc.

Having power in a greater sense overpopulation needs to be followed with greater social responsibility and justice but that is often missing.

D Quantitative Innovative Finance

Modern tools and possibilities of finance are international financial cooperation that is linked to quantitative approach, constant measurement of large data bases on different fields, investing or selling properties, investing in new equities, futures, options markets, or simply developing new money that is called cloud, are cycle that is present as possible reward, tool or additional risk that each person, company or state need to have in mind. We can buy shares now all over world, be part of investors when governments issuing bonds but are also vulnerable to international fraud, international or local computer fraud, fraud of companies to take money and give false products in the best way or not giving good service that is paid for. Risk and rewards come from associations where small ones can be contributors and they do not fully operate with market or invested fees. This is the fourth type of financing today in the world needed to be tackled.

Number	Quantitative Finance and Other Possibilities
1.	Possibility to measure and calculate different data bases
2.	Approach to many new markets and company data
3.	Approach to different possibilities to invest
4.	Exotic instrument existence and proper understanding
5.	Clear understanding of liquidity in your own case and certain base
6.	Have legal protection when protecting your money while investing in the world market
7.	Developing locally different opportunities for the population and investors from abroad
8.	Increase values of companies by supporting buying, selling on world market
9.	Sell those who pushes foreign market into war or bankruptcy like large military involvement is danger not on foreign ground but its own soil
10.	Computer skills, analytical approach, database opportunity, financial mathematics, models, algorithm, etc. knowledge usage protection risks rewards connected

Source: Wikipedia.org

We see many new tools that are present on market like buying on forward market and hedging its needs over price increase as profitable and good strategy that can outreach national borders. But new strategies and relations can be polluted if one market participants act as fraud market participants taking money not giving proper good in

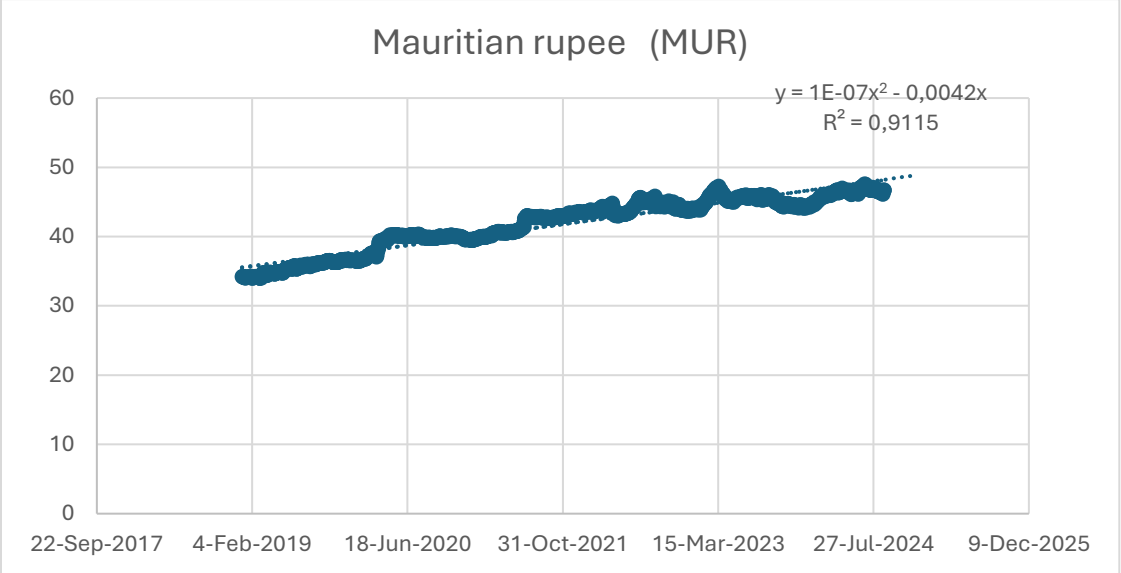
return. This pollution acts as market inhibitor and lowers progress of all. There are organized and individual acts of fraud on the internet but lowering this brings people together giving them much freedom to decide their own best financial strategy for the future. Only by giving opportunity in a fair way can gains be reached on local and word level. Otherwise, all comes as domino effect back to fraudulent participant, and his surrounding and world as whole. Right amount of push and understanding, education in the field of international exotic instruments and cross border investment strategies, legal help in need further improve local imbalances and injustice pushing them to regroup to increasingly beneficial strategies for all.

1. EXCANGE RATE HISTORY IMPLICATION

History of national currency can point to developments on side of GDP, country strengths and weaknesses. Trend point us to direction where economy is going and what is perspective. In the investment world this data is the most important since they decide whether to go for further investment, what interest rate is expected to be and how someone can allocate their financial resources further.
This graph presents not just past events but clears images of the near future in the most vivid and short way possible.

In *Graph 1* we observe USD=Mur relation and Mur lowering its strength from 35 to 49 MUR per USD. With the current trend there is a possibility of continuing with a weakening trend that goes over 45. Now it is time to reverse trends and strengthen the currency by attracting investment and bringing further prosperous investors into the land economy.

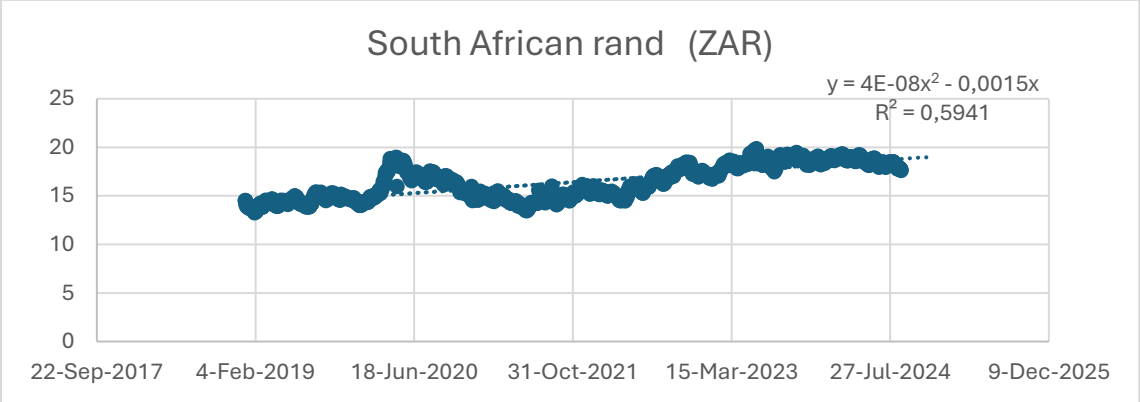
Name: Mauritian rupee



Graph:1

Neighboring reginal economies that can influence the national economy are of interest also.

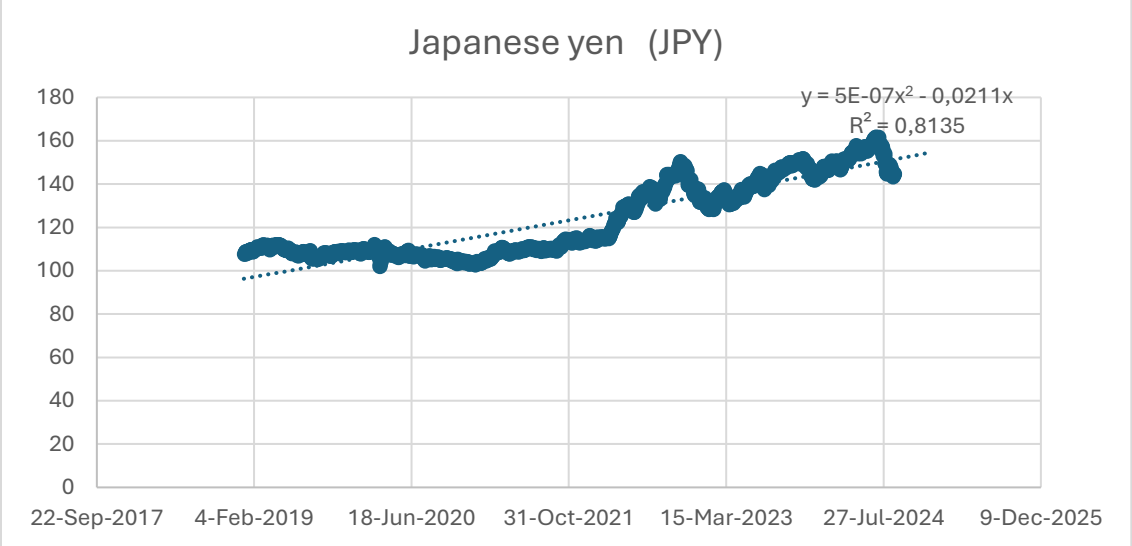
South African currency is also following similar road with much larger fluctuation especially in covid time, and clear goal to reverse downtrend looking into strengthen currency through different associations like BRIC's.



Graph:2

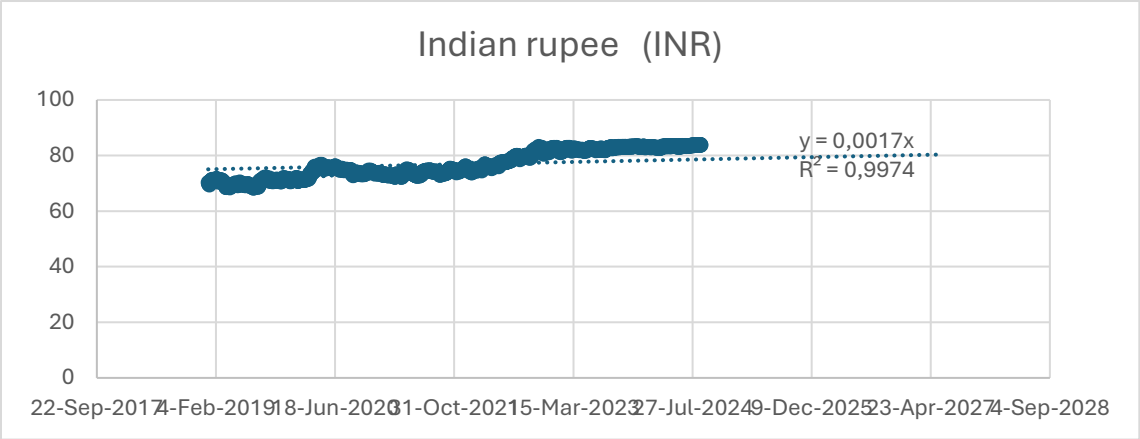
Japanese Jen also had stable currency until 2023 when fluctuated downwards and continue with sinusoid movement overall from 100 Yen to 140 Yen per USD in 2024 .

Now its value is 152 per 1 USD.



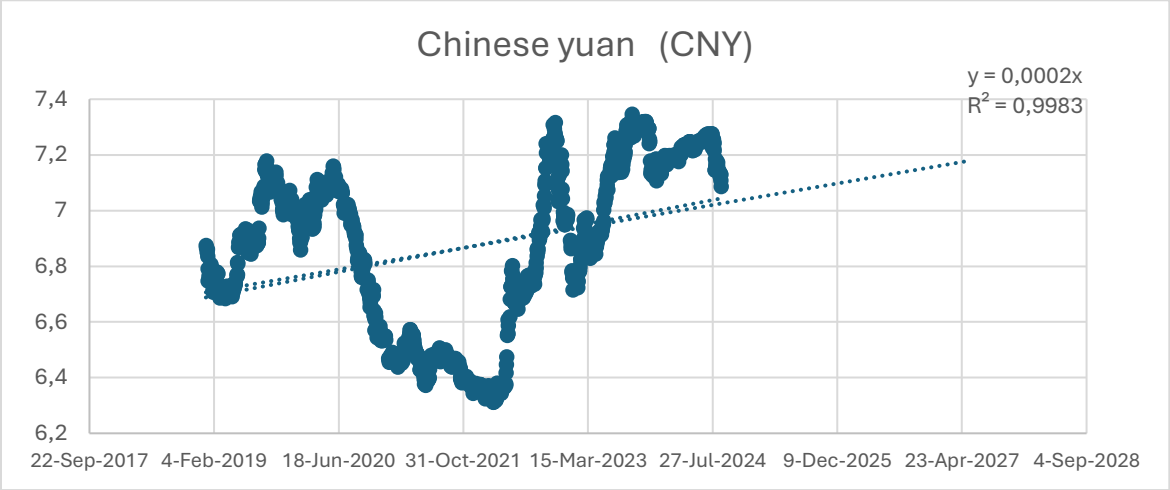
Graph:3

Indian rupee is heading from 70 per 1 USD to 85 per 1 USD. Trend is from 2017 to 2024. So, in 7 years' time we mark significantly lowering the value of the currency.



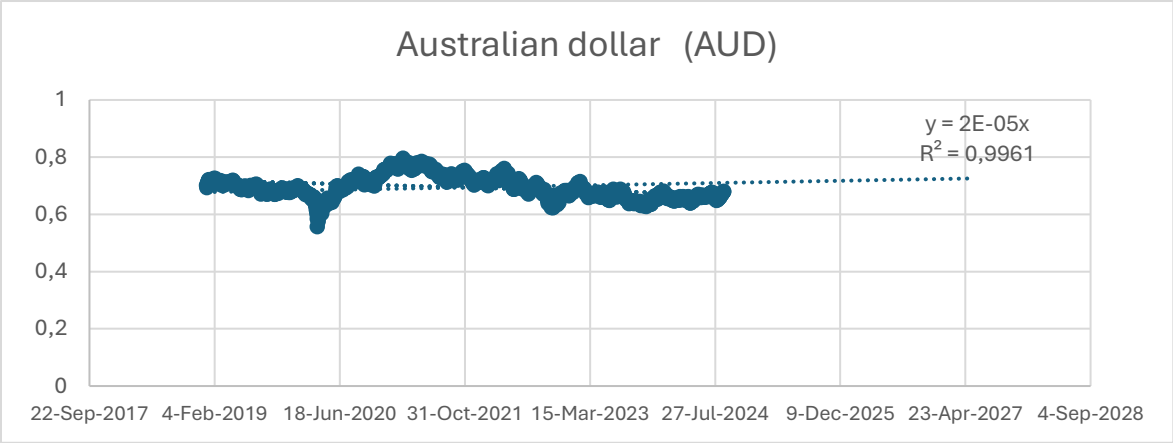
Graph:4

Chinese Yuan is losing strength to USD at much less rate than other currencies. It was traded from 6,6 to 7,3 per 1 USD. Chinese Yuan has strength to fluctuate and rebalance to lower values. Trend expected to be around 7,2 is all stays same.



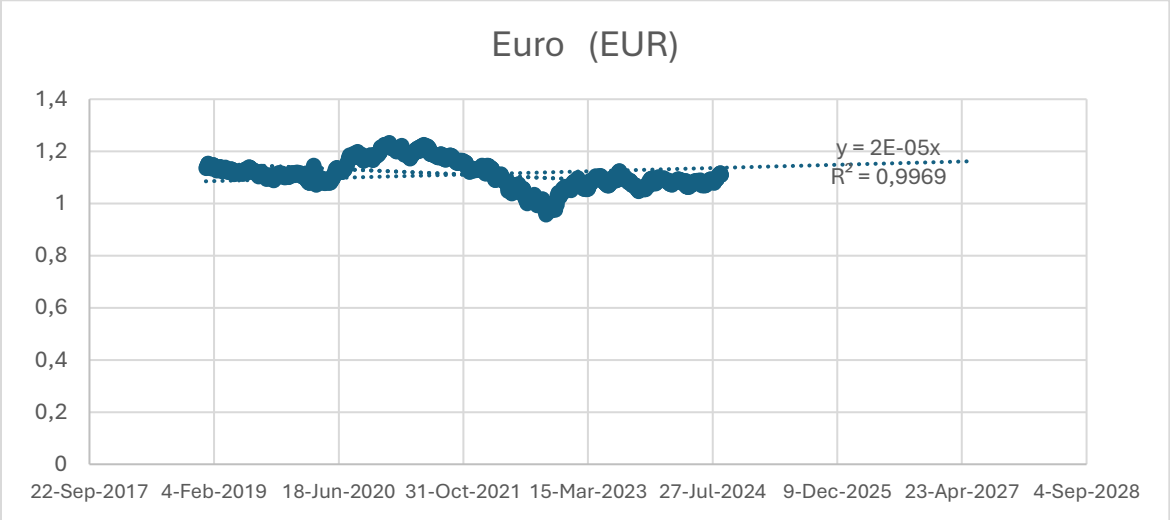
Graph:5

Australian dollar is around same level of 0,7 to USD following same trend as USD.



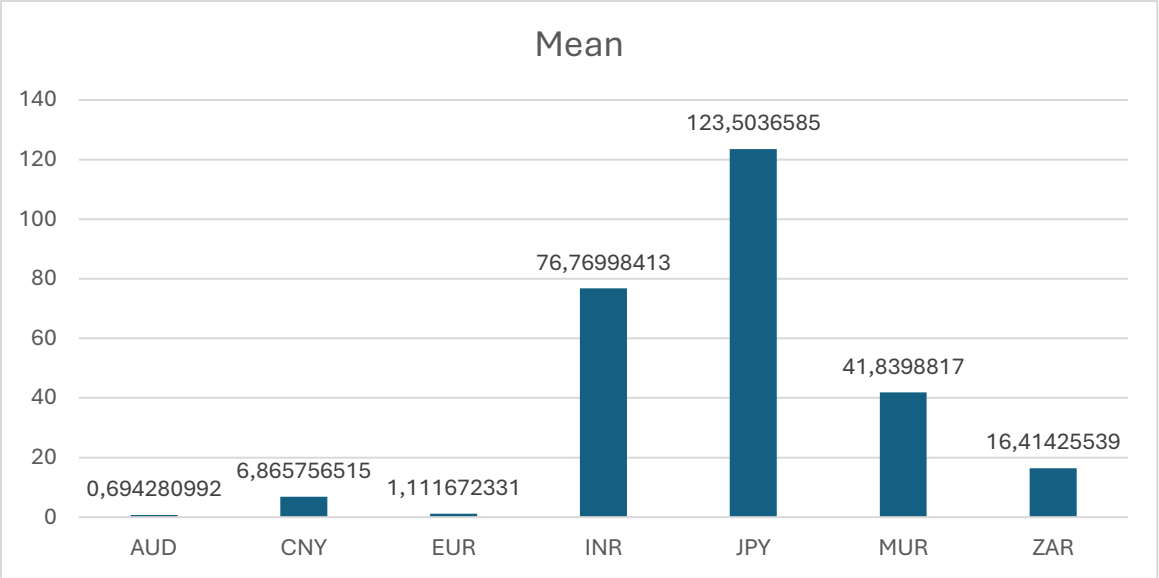
Graph:6

In Europe, the large number of countries pay with Euro. It started at 1.2 and declined to 1. Now you can, for 1 Euro buy 1,09 USD what is a great fall in currency predicted possibilities.



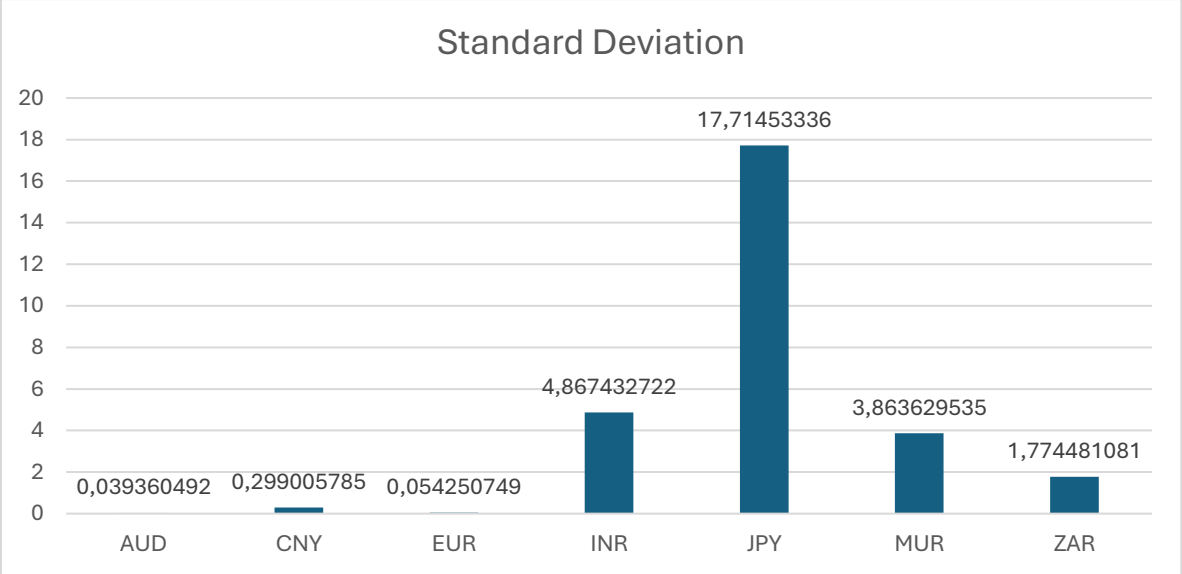
Graph:7

If we compare all currencies, we see large discrepancies in values and different mean values. Mauritian money is situated between Japan India and South Africa in having similar region and policy. Japan is highly indebted country and India although on increasing economic path still fighting basic poverty rate.



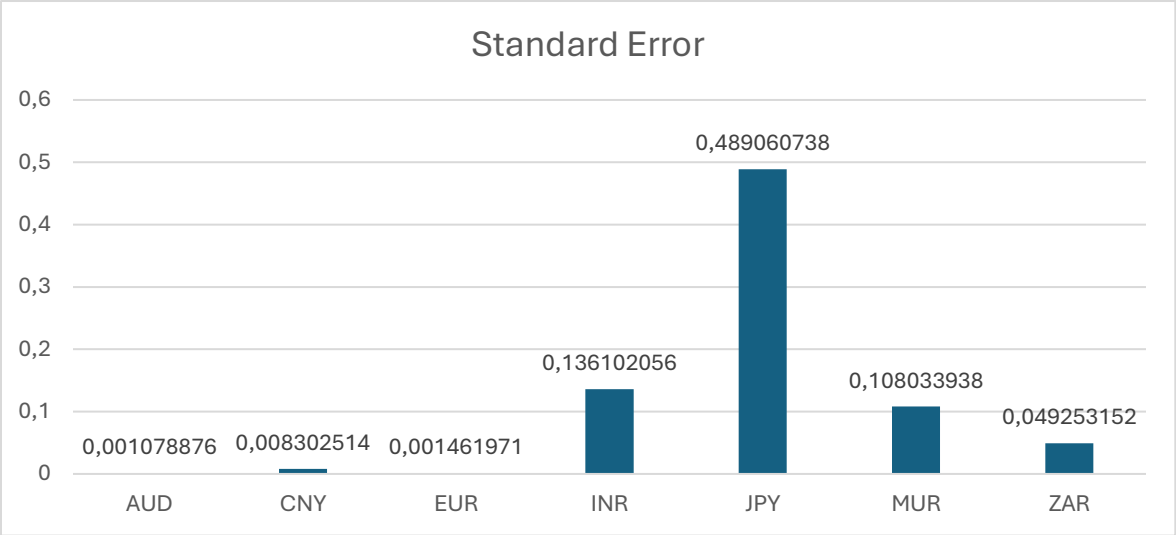
Graph:8

Standard deviation of each currency deviated differently. Jaan currency has the largest standard deviations, after comes Indian rupee and Mauritian money.



Graph:9

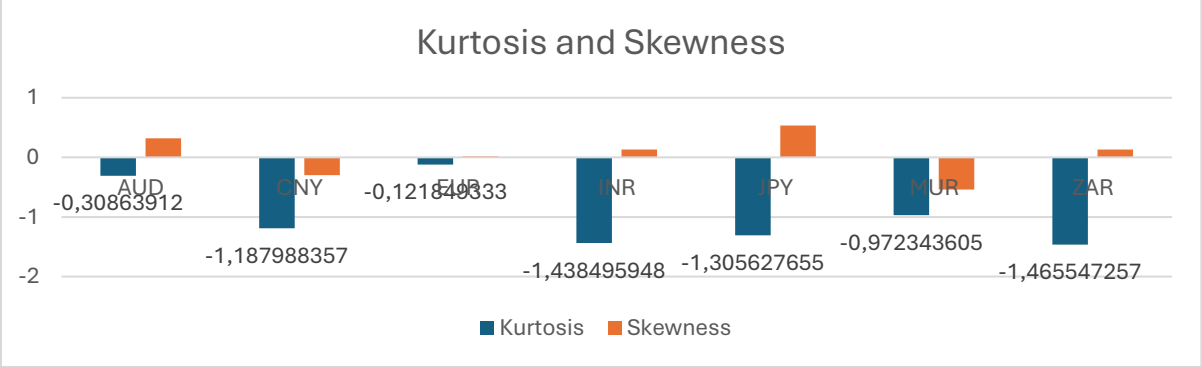
And standard error has similar values where we can expect those currencies with largest nominal numbers to have largest standard error.



Graph:10

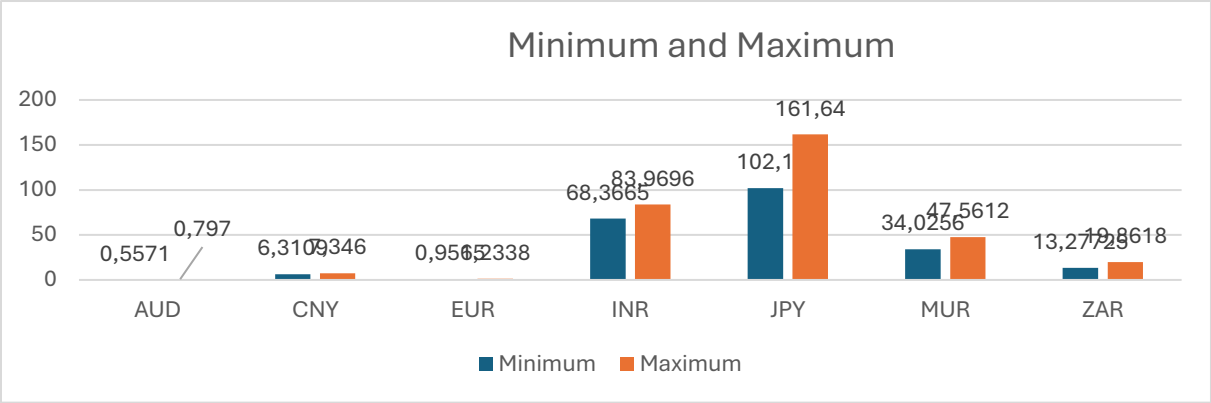
When we look at each kurtosis, we see that distribution of each presented currency is platykurtic meaning that it has thinner tails and presents continuous and discrete uniform distribution.

Skewness around 0 has CNY EUR INR ZAR so that means that there are normal symmetric distributions. Half normal below 1 are JPY and MUR currencies.



Graph:11

Looking at the last 5 years we see that those with highest absolute value has the largest fluctuating and difference between min and max is largest in JPY Japan Yen 161-102 and Indian INR 83-68.



Graph:12

In table 1 a statistical comparison is presented between currencies, their mean values, SD, Kurtosis, Skewness min and max values.

Table 1: Currencies and statistical values

	Mean	Standard Erro	Median	Mode	andard Deviat	ample Varianc	Kurtosis	Skewness	Range	Minimum	Maximum	Sum	Count
AUD	0,694281	0,001079	0,6897	0,6775	0,03936	0,001549	-0,30864	0,318266	0,2399	0,5571	0,797	924,088	1331
CNY	6,865757	0,008303	6,9097	6,8673	0,299006	0,089404	-1,18799	-0,29754	1,0351	6,3109	7,346	8904,886	1297
EUR	1,111672	0,001462	1,1043	1,0867	0,054251	0,002943	-0,12185	0,020131	0,2773	0,9565	1,2338	1530,773	1377
INR	76,76998	0,136102	75,3532	75,3859	4,867433	23,6919	-1,4385	0,130908	15,6031	68,3665	83,9696	98188,81	1279
JPY	123,5037	0,489061	113,625	108,86	17,71453	313,8047	-1,30563	0,531637	59,54	102,1	161,64	162036,8	1312
MUR	41,83988	0,108034	43,0788	34,178	3,86363	14,92763	-0,97234	-0,5408	13,5356	34,0256	47,5612	53513,21	1279
ZAR	16,41426	0,049253	16,18805	14,0942	1,774481	3,148783	-1,46555	0,130494	6,58455	13,27725	19,8618	21305,7	1298

What is of great interest to us is how these currencies influence one dependent variable. In our case, the Mauritian rupee.

We see that rise in value is under strong influence of JPY Indian Ruppe and Soth African rupee. Australian USD influence other way around values of Mauritian rupee currency.

Table2: Linear regression MUR/ AUD, CNY, EUR, INR, JPY, ZAR

		Coefficients	*andard Err*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95,0%*	*pper 95,0%*
	Intercept	-0,25501	0,066748	-3,82057	0,000142	-0,386	-0,12403	-0,386	-0,12403
AUD	-0,153415497	0,058046	0,038802	1,495969	0,134987	-0,0181	0,134192	-0,0181	0,134192
CNY	0,836621563	-1,00089	0,040982	-24,4226	4,6E-103	-1,08131	-0,92046	-1,08131	-0,92046
EUR	0,057019124	0,048773	0,031761	1,535604	0,124962	-0,01356	0,111101	-0,01356	0,111101
INR	1,844261528	1,15785	0,054877	21,09905	1,26E-81	1,050159	1,265541	1,050159	1,265541
JPY	2,03193334	0,12245	0,018708	6,545241	9,61E-11	0,085737	0,159163	0,085737	0,159163
ZAR	1,149722418	0,231409	0,025162	9,1967	2,2E-19	0,18203	0,280787	0,18203	0,280787

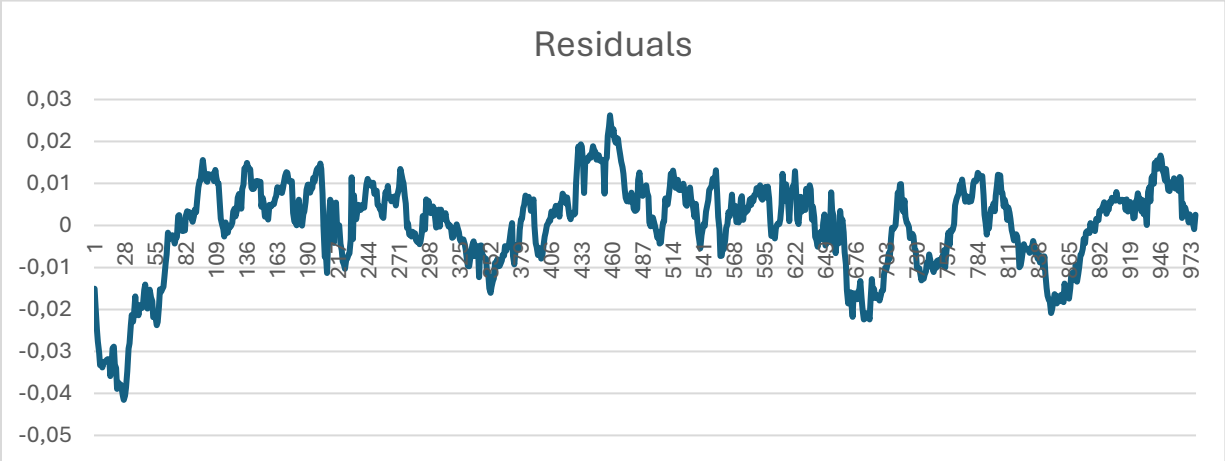
As *Table 3* shows, this is a strong relation and movement of variable can be interpreted based on movements of other variables as secondary relation.

Table 3: Regression statistics

Regression Statistics	
Multiple R	0,964606
R Square	0,930464
Adjusted R Square	0,930034
Standard Error	0,010961
Observations	977

ANOVA					
	df	*SS*	*MS*	*F*	*gnificance*
Regression	6	1,559332	0,259889	2163,263	0
Residual	970	0,116533	0,00012		
Total	976	1,675865			

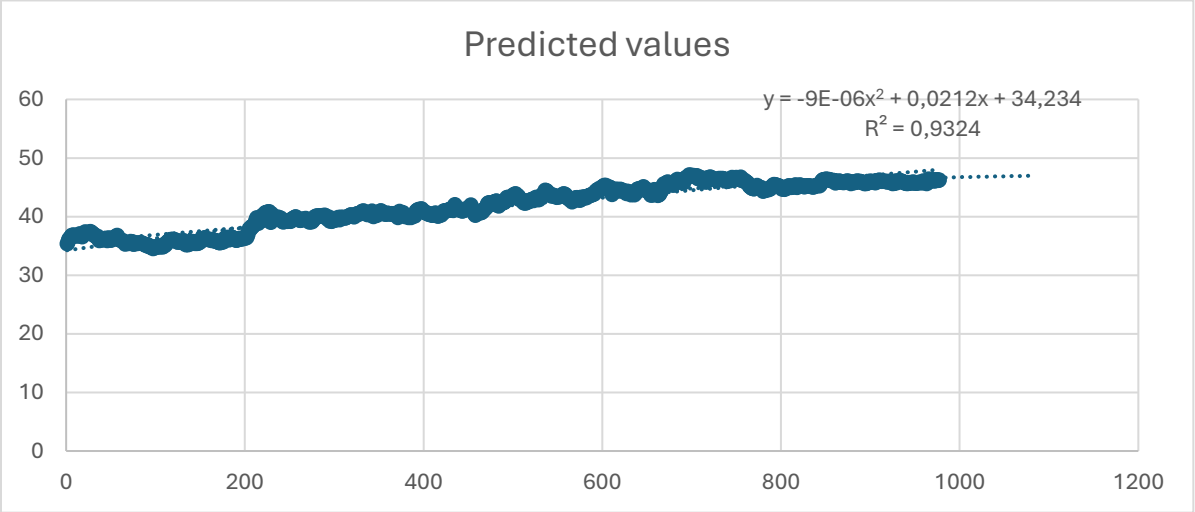
Reading from graph 13 residuals have sinus shape so need to be de seasonal gain. Residuals are within borders of 0,02 to-0,04. that is acceptable based on currency.



Graph:13

Predicting further movements is of essence to the country, government, investors, since they can plan their money movements.

From the model presented in Graph *14* we can observe that predicted values are further rise from around 45 to further making currency weaker to USD. That is the way we make predictions we need to take additional measures.



Graph:14

2. IMPACT OF INFLATION

The other important mark that shows how the country is developing is presented in consumer producer price level and index or rise and fall in absolute percentage rates. Price large fluctuation brings instability to local market and market in stress is less attractive to potential investors.

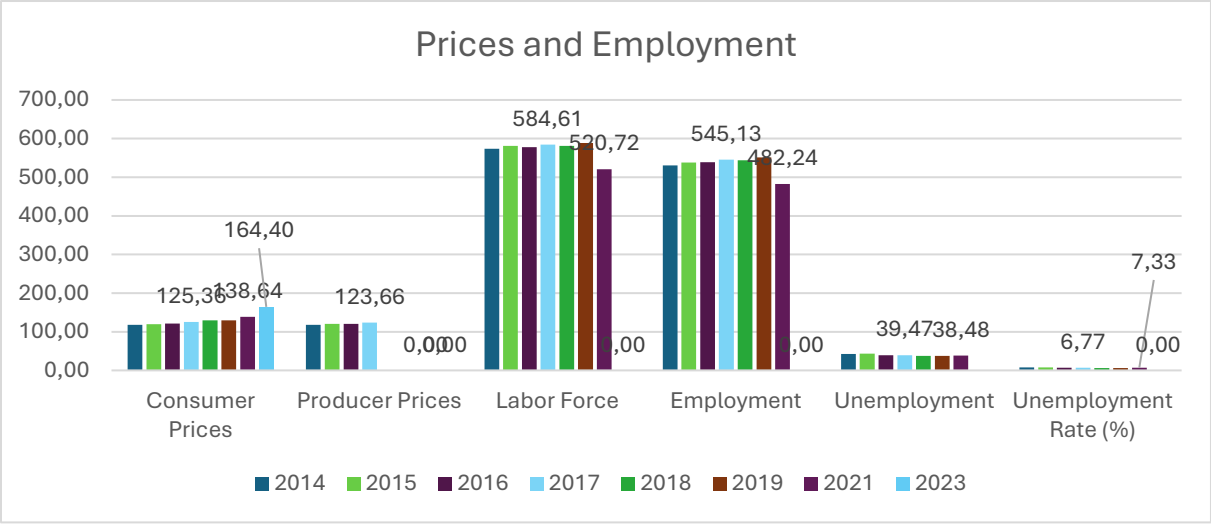
The table presents data about consumer prices and employment or unemployment rate.

We can see large increase in prices especially period 2021 -2023 with war in Ukraine and instability after covid times with crude oil prices on constant level but with constant threat of having or not oil at local markets throughout world. There is a danger of spreading war in the Middle East and this is the basis for energy instability bringing economic collapse further. In the last nine years we have observed a constant rate of unemployment that is going around 6-7%.

Table 4: Prices and Unemployment

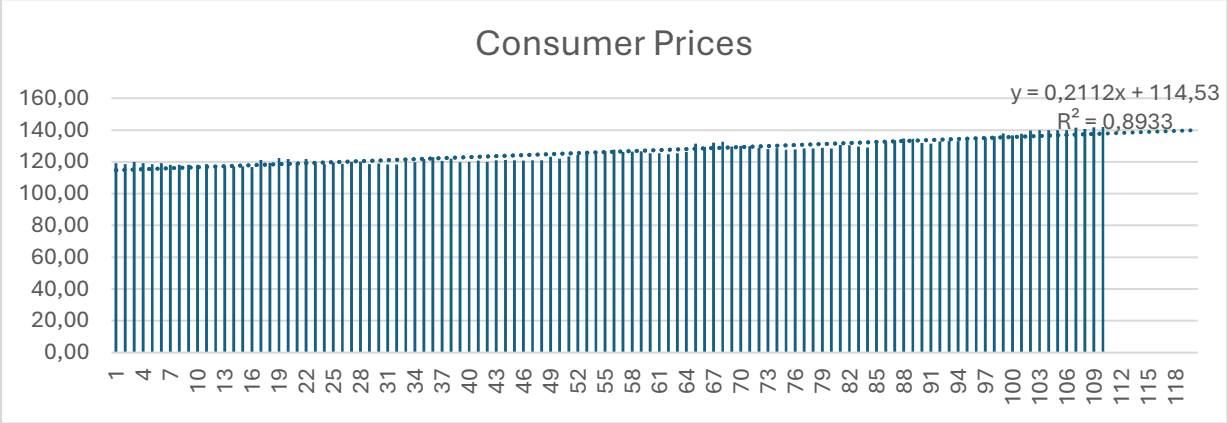
	Consumer Prices	Producer Prices	Labor Force	Employment	Unemployment	Unemployment Rate (%)
	Index	Index	Number of	Number of	Number of	Percent
	Units	Units	Thousands	Thousands	Thousands	Units
	2010=100	2010=100				
2014	118,23	118,13	573,77	530,93	42,85	7,46
2015	119,75	120,71	581,50	538,41	43,09	7,41
2016	120,92	120,84	578,00	538,62	39,38	6,83
2017	125,36	123,66	584,61	545,13	39,47	6,77
2018	129,39	...	581,35	543,99	37,36	6,43
2019	129,91	...	588,65	551,38	37,27	6,33
2021	138,64	...	520,72	482,24	38,48	7,33
2023	164,40	...	...	...	...	...

The graph that follows shows that labor force shrinks in the last period and employment goes down but keeping unemployment rate the same what points to constant unemployed personnel. This needs further education or support to reenter work force environment.



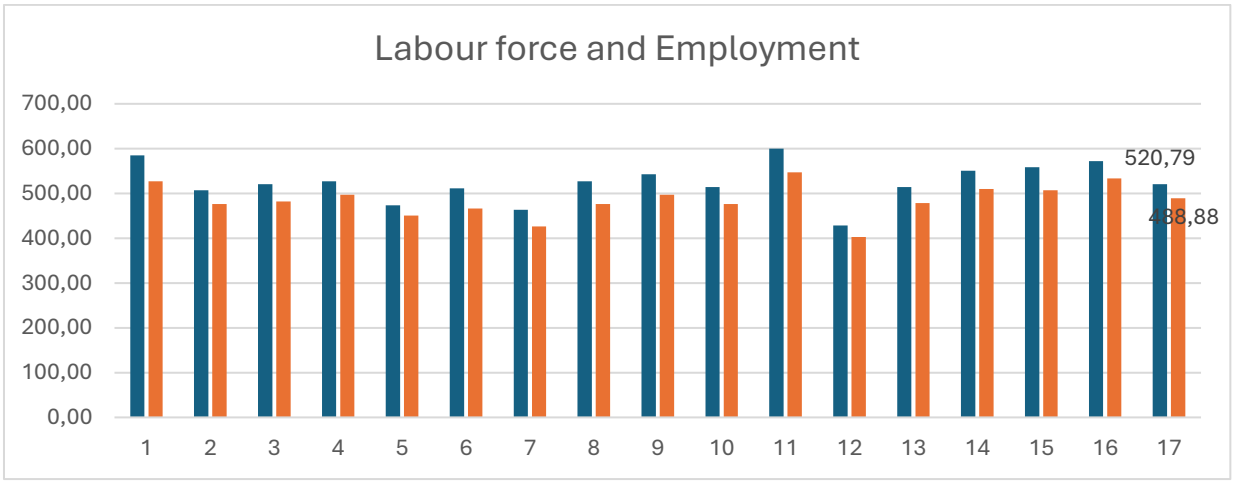
Graph:15

A constant rise in consumer prices is of no small worries around the world. Especially important is in small open economy, and dangerous in small island economy where producer prices do not exist in many aspects.



Graph:16

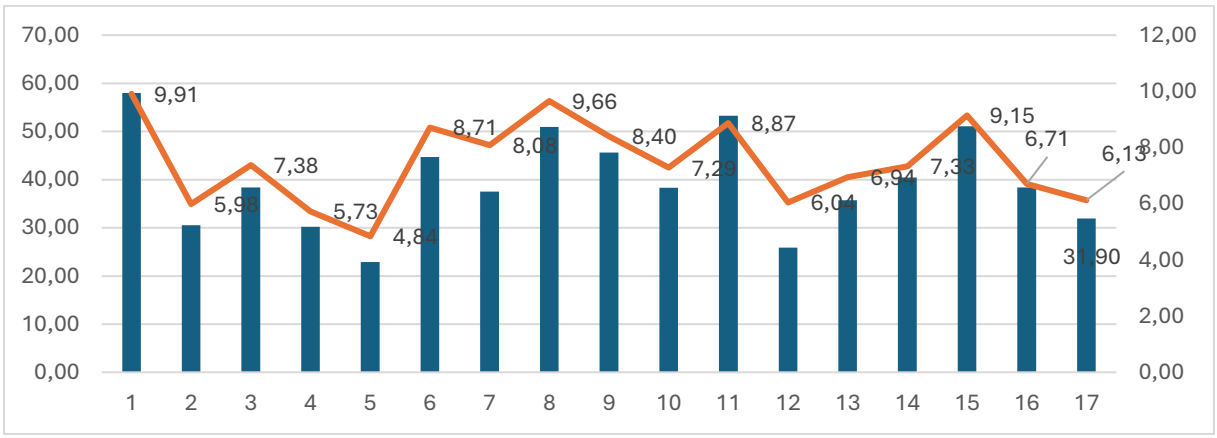
Graph that follows shoe sinusoidal movement of labor force and employment. There is a natural rate of unemployed people that is constant in all periods.



Graph:17

The rate of unemployment is around 6 percent but fluctuates at 9%. Seasonality, the number of jobs seasonally offered, majority new offerings in the tourist sector contribute to that image. More stable long-term job possibilities as well as changing or adding education to the unemployed would contribute to better prosperity overall.

Unemployment



Graph:18

The following relation examines the relation between unemployment level and consumer prices.

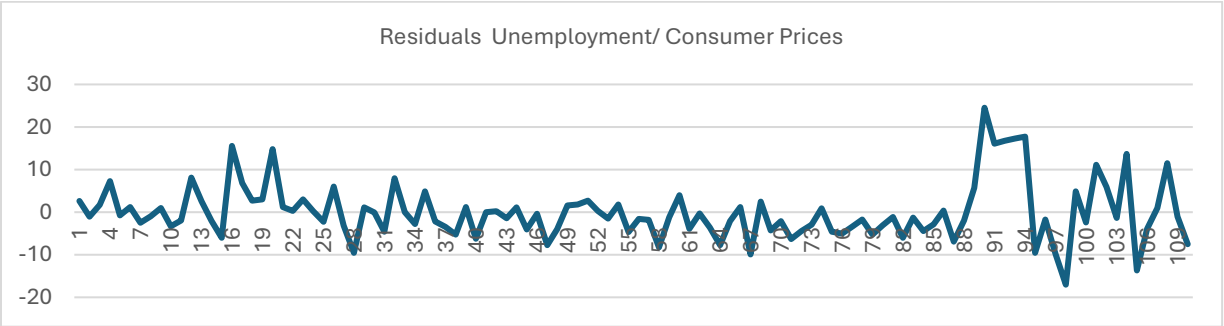
With prices going up unemployment declines to the natural rate of unemployment.

Unemployment = 51,84-0,0875 Consumer Prices +e

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	51,84734	11,39715	4,549151	1,42E-05	29,25622	74,43847	29,25622	74,43847
X Variable 1	-0,08751	0,090132	-0,97092	0,333757	-0,26617	0,091146	-0,26617	0,091146

Calculated

Residuals -Unemployment



Graph:19

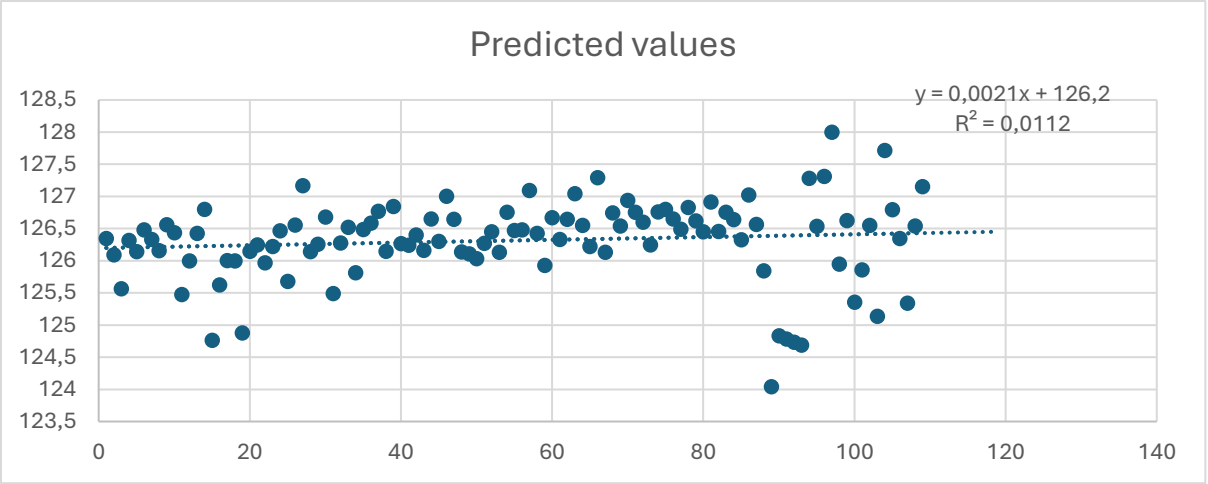
Regression Statistics	
Multiple R	0,98572
R Square	0,971643
Adjusted R Square	0,962947
Standard Error	1,226706
Observations	116

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	5929,616	5929,616	3940,449	2,95E-90
Residual	115	173,0528	1,504807		
Total	116	6102,669			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
118,2314	0,056517	0,0009	62,773	8,03E-91	0,054734	0,058301	0,054734	0,058301

So, if we take u=interc. +x or unemployment rate = 118+0,056* cpi



Graph:19

	Regression Statistics								
	Multiple R	0,443412							
	R Square	0,196615							
	Adjusted R	0,181456							
	Standard E	0,021886							
	Observatic	109							
	ANOVA								
		df	*SS*	*MS*	*F*	*ignificance F*			
	Regressior	2	0,012425	0,006213	12,97082	9,14E-06			
	Residual	106	0,050771	0,000479					
	Total	108	0,063197						
		Coefficients	*andard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95,0%*	*Upper 95,0%*
	Intercept	3,173409	0,211583	14,99839	5,81E-28	2,753925	3,592894	2,753925	3,592894
unemploy	1,644163	-0,01682	0,030854	-0,54507	0,586849	-0,07799	0,044353	-0,07799	0,044353
lf	2,756436	-0,37956	0,07868	-4,82411	4,74E-06	-0,53555	-0,22357	-0,53555	-0,22357

3. GDP AND ITS COMPONENTS

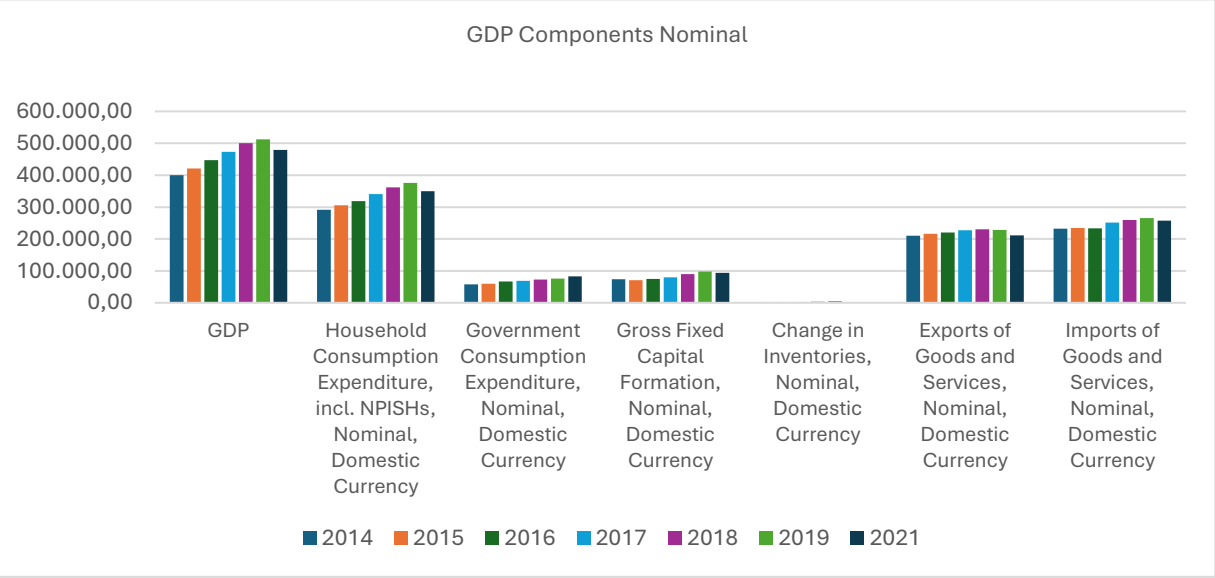
Real data that is the most realistic image of one economy are GDP components. These numbers speak about strength, potential, trend, and capacity to create.

GDP grew in the period from 2014 to 2021 from 400 mil to 478 mil . or 19% since exports and imports rose at a slower pace while household expenditure grew from 291 mil to 350 mil. at 20% increase rate.

Table 5: GDP

	2014	2015	2016	2017	2018	2019	2021
GDP	400.351,00	420.936,00	447.620,00	472.861,00	500.047,00	512.108,00	478.807,00
Household	291.994,00	305.476,00	318.666,00	340.516,00	362.331,00	375.746,00	350.019,00
Governmen	57.429,00	59.730,00	66.618,00	68.332,00	72.819,00	75.534,00	82.509,00
Gross Fixed	73.990,00	71.133,00	74.980,00	79.490,00	90.242,00	97.745,00	93.820,00
Change in	2.352,00	2.499,00	2.337,00	4.055,00	4.131,00	1.788,00	951,00
Exports of	210.283,00	216.773,00	220.113,00	227.707,00	230.503,00	228.744,00	211.641,00
Imports of	232.464,00	234.243,00	233.622,00	251.066,00	259.979,00	265.399,00	257.590,00
Statistical	-3.233,00	-431,00	-1.471,00	3.828,00	0,00	-2.050,00	-2.543,73

Government consumption grew from 57 mil to 82 mil what is 43% increase, and gross fixed capital formation grew from 73 mil to 93 mil what is 27% increase.

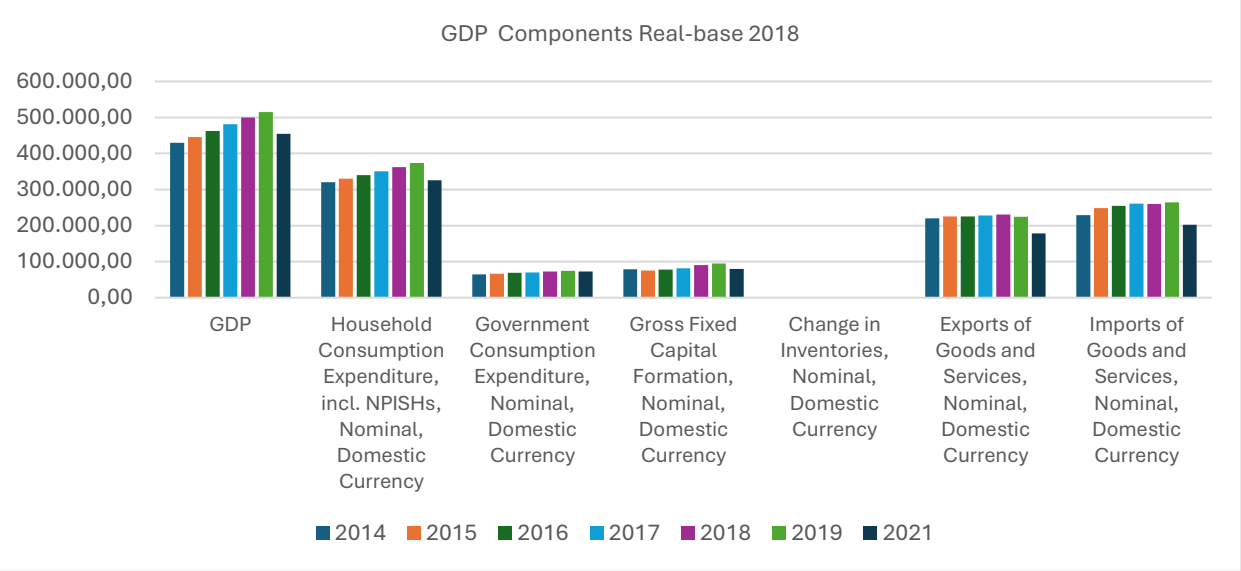


Graph:20

Looking at 2018 prices GDP grew from 429 to 454 mil . what is 5% increase. Similar values are at the other components.

Table 6: GDP on constant 2018 prices

		2014	2015	2016	2017	2018	2019	2021
2018	GDP	429.513,65	445.365,09	462.567,18	480.783,00	500.047,00	514.505,00	454.627,11
2018	Household	320.898,17	330.307,09	340.063,41	351.045,95	362.331,00	373.750,00	326.084,00
2018	Government	64.977,91	66.088,93	68.990,74	69.638,69	72.819,00	74.235,00	72.281,02
2018	Gross Fixed Capital	79.278,06	74.968,07	77.746,67	81.309,05	90.242,00	94.656,00	80.074,13
2018	Change in	0,00	0,00	0,00	0,00	0,00	0,00	0,00
2018	Exports of Goods and	220.458,10	225.653,05	225.535,66	227.698,99	230.503,00	224.223,00	178.352,99
2018	Imports of Goods and	228.836,70	248.413,61	254.944,21	260.559,70	259.979,00	264.136,00	202.285,73



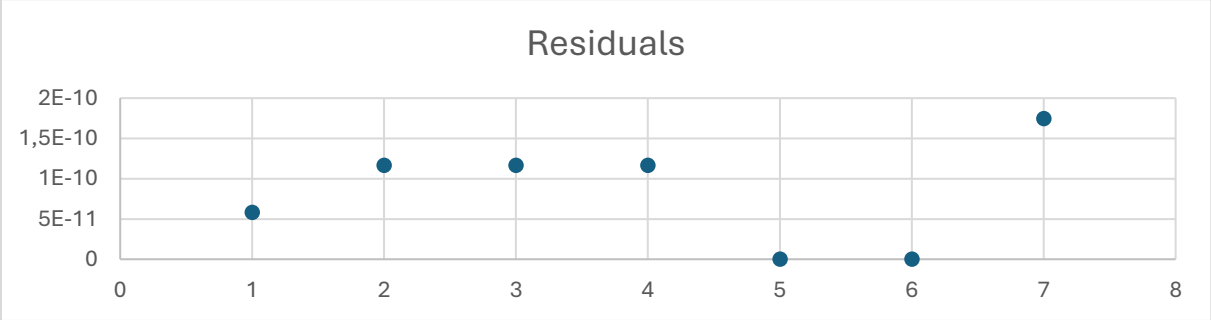
Graph:21

What is of special interest is how all these components influence GDP. So, we did linear regression and determined the following:

GDP= -231.290+0,45*Household+1,69* Government+0,57* Fixed capital-0,71 Change+1,95 *Export-0,22 *Import +e

		Coefficients
	Intercept	-231.290
Household	X Variable 1	0,454108
Government expenditure	X Variable 2	1,695496
Fix capital formation	X Variable 3	0,577905
Change	X Variable 4	-0,71188
Export	X Variable 5	1,958222
Import	X Variable 6	-0,22021

Residuals follow in the graph:



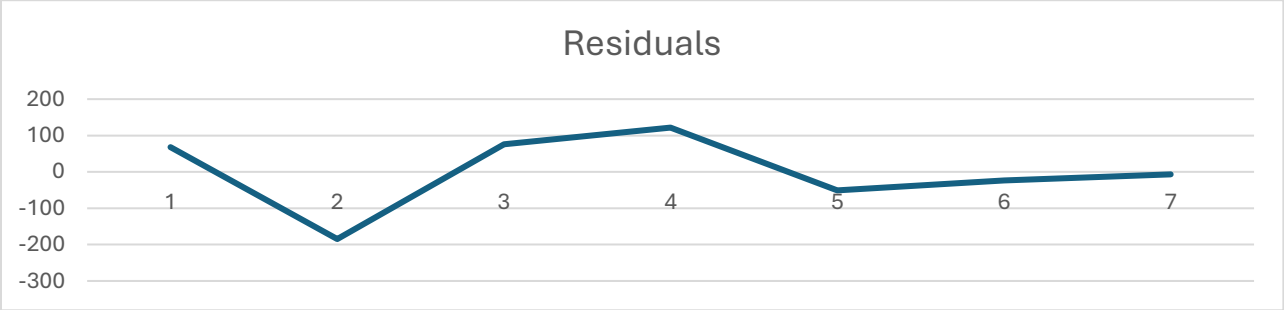
Graph:22

If we take data in regression GDP but all put in 2018 values, we obtain the following data.

GDP=-252.533+2,72 Household+1,43 Government -2,08 Fixed Capital +o,71-1,21 Import +e

	Coefficients
Intercept	-252.533
house	2,72737231
gov	1,43137898
fix	-2,08264643
change	0
export	0,71430964
import	-1,21748242

Residuals from 2018 regression are as follows:

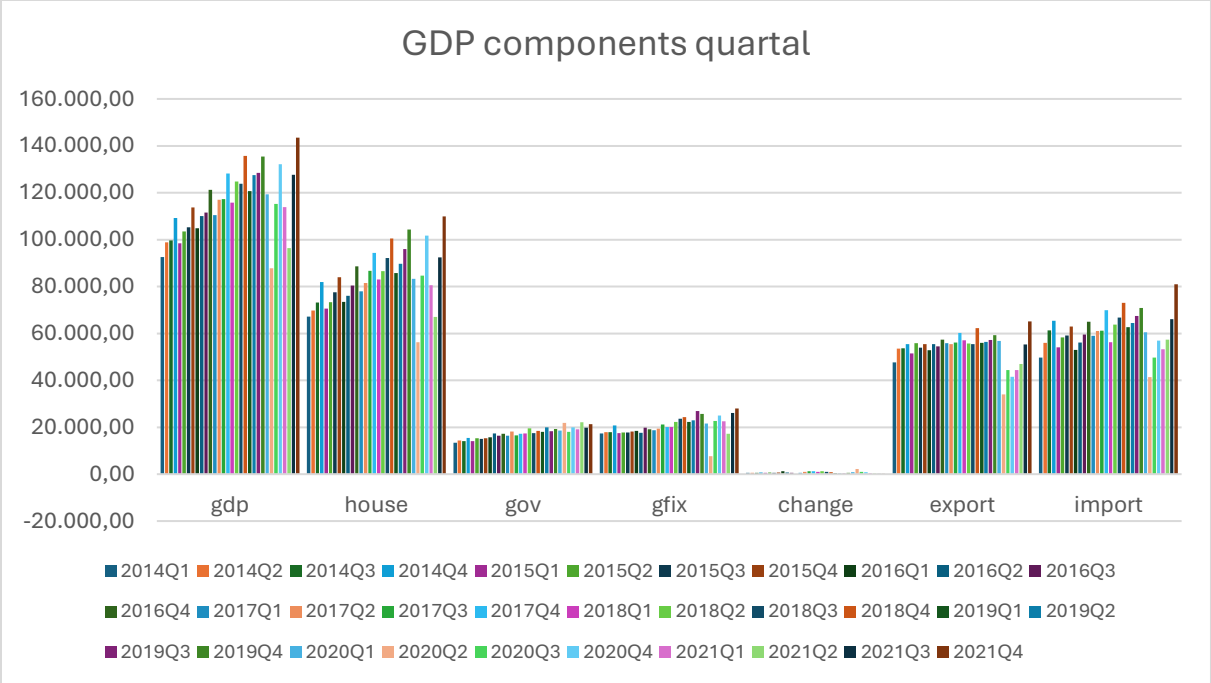


Graph:23

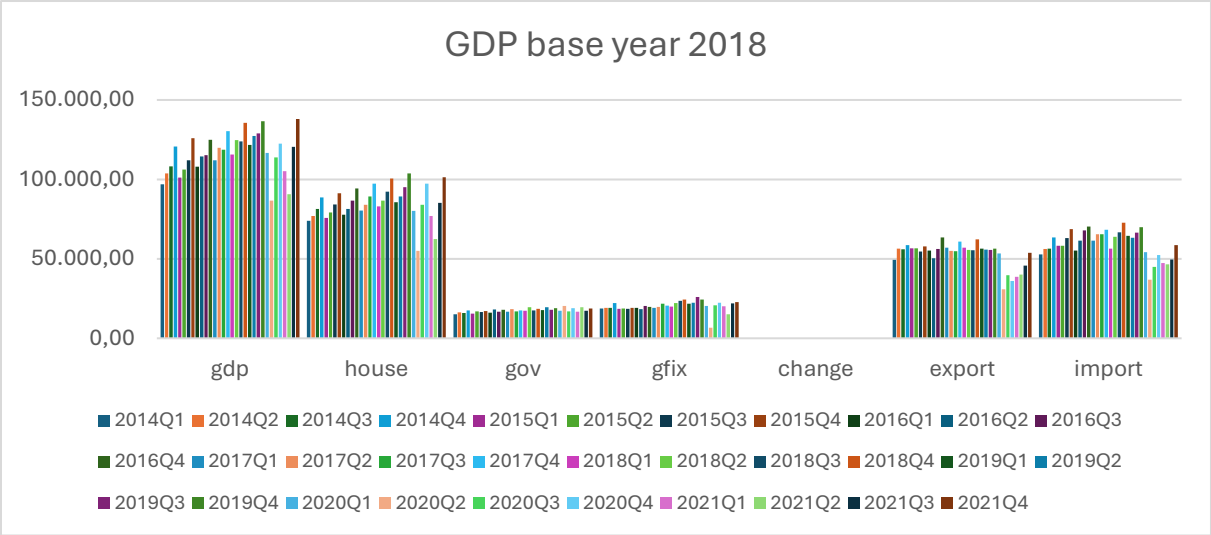
This was made for yearly data.

A more complex example is GDP, and its components based on ***quarterly results***.

GDP goes from 100 mil to 140 mil USD and household expenditure is from 60 to 100 mil USD.

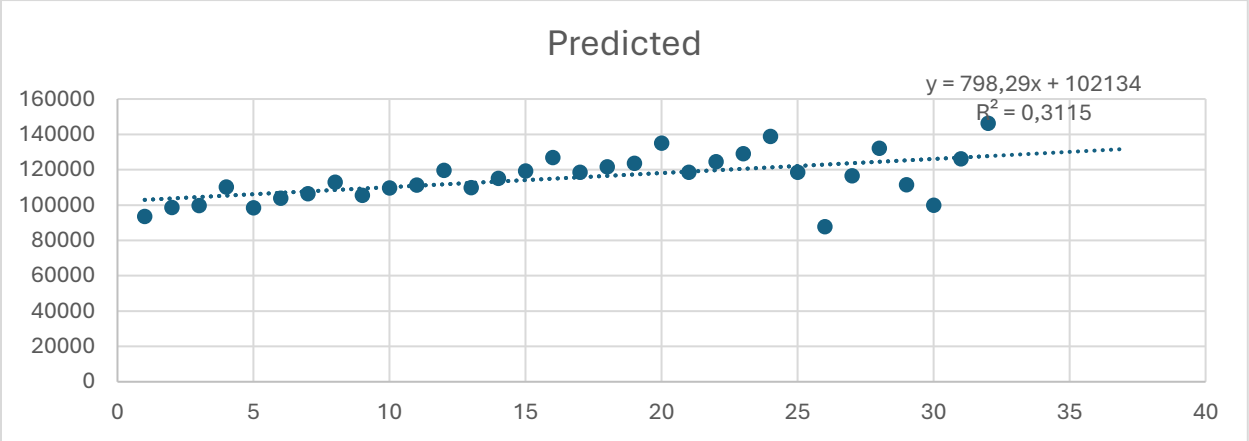


Graph:24



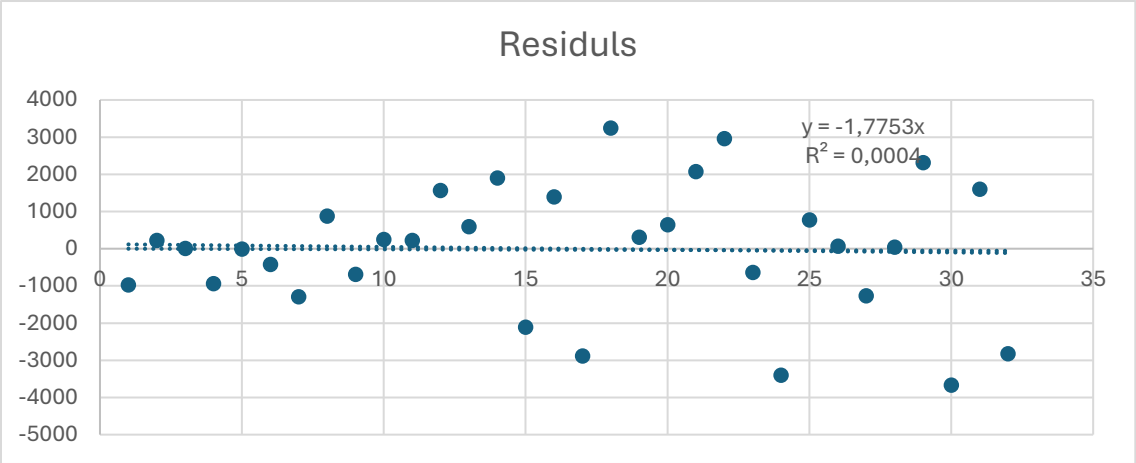
Graph:25

Predicted GDP is having seasonal characteristics with an upward trend that deviated at end.



Graph:26

Residuals grow in later number of observations.



Graph:27

With that basic in mind, we have calculated linear regression and determined that.

GDP= -3.899 +1,04 Household+1,18 Government Expenditure+0,13 Fixed Capital formatiol+0,605 Export -0,40 Import +e

	Coefficients	*andard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95,0%*	*pper 95,0%*
Intercept	-3899,04	5074,377	-0,76838	0,44946	-14349,9	6551,833	-14349,9	6551,833
hous	1,041519	0,093868	11,09558	3,78E-11	0,848195	1,234844	0,848195	1,234844
gov	1,181919	0,200042	5,90835	3,64E-06	0,769925	1,593914	0,769925	1,593914
fix	0,137137	0,230485	0,594992	0,557196	-0,33756	0,611831	-0,33756	0,611831
chang	1,097313	1,058756	1,036417	0,309929	-1,08324	3,277862	-1,08324	3,277862
ex	0,605309	0,135215	4,476651	0,000145	0,326829	0,883788	0,326829	0,883788
im	-0,40598	0,146347	-2,77413	0,010316	-0,70739	-0,10458	-0,70739	-0,10458

ANOVA					
	df	*SS*	*MS*	*F*	*gnificance*
Regressior	6	5,58E+09	9,3E+08	247,8716	5,09E-21
Residual	25	93819544	3752782		
Total	31	5,68E+09			

Adjusted to 2018

If we adjust data on 2018 prices regression goes as

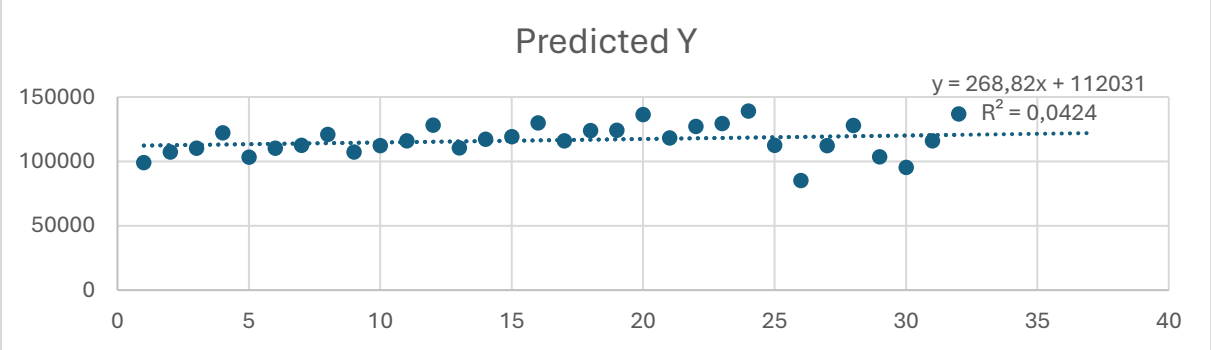
GDP= -26.655+0,97Household +2,53*Expenditure Government + 0,40 Fixed capital formation +0,37 Export- 0,20 Import *e

Regression on GDP.

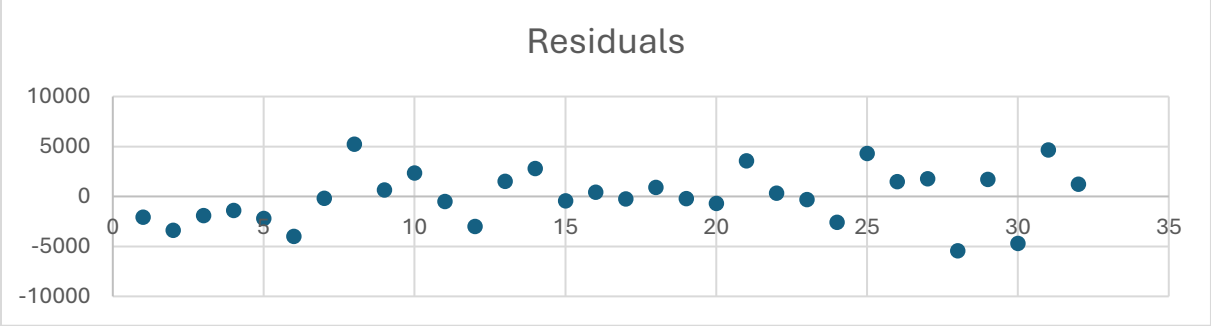
	Coefficients	andard Erro	t Stat	P-value	Lower 95%	Upper 95%	ower 95,0%	pper 95,0%
Intercept	-26655,9	10357,83	-2,5735	0,016385	-47988,2	-5323,51	-47988,2	-5323,51
house	0,970116	0,119169	8,140689	1,71E-08	0,724683	1,215548	0,724683	1,215548
gov	2,533462	0,512942	4,939082	4,36E-05	1,477038	3,589886	1,477038	3,589886
fix	0,402342	0,31417	1,28065	0,212071	-0,2447	1,049388	-0,2447	1,049388
ch	0	0	65535	#NUM!	0	0	0	0
exp	0,376815	0,158146	2,382711	#NUM!	0,051108	0,702522	0,051108	0,702522
impo	-0,20117	0,169682	-1,18555	0,246948	-0,55063	0,148301	-0,55063	0,148301

ANOVA					
	df	SS	MS	F	ignificance
Regressior	6	4,65E+09	7,75E+08	89,23284	1,18E-15
Residual	25	2,17E+08	8679645		
Total	31	4,86E+09			

Prediction is based on quarters and rises in 4th quarter in a row. Bringing stable results.



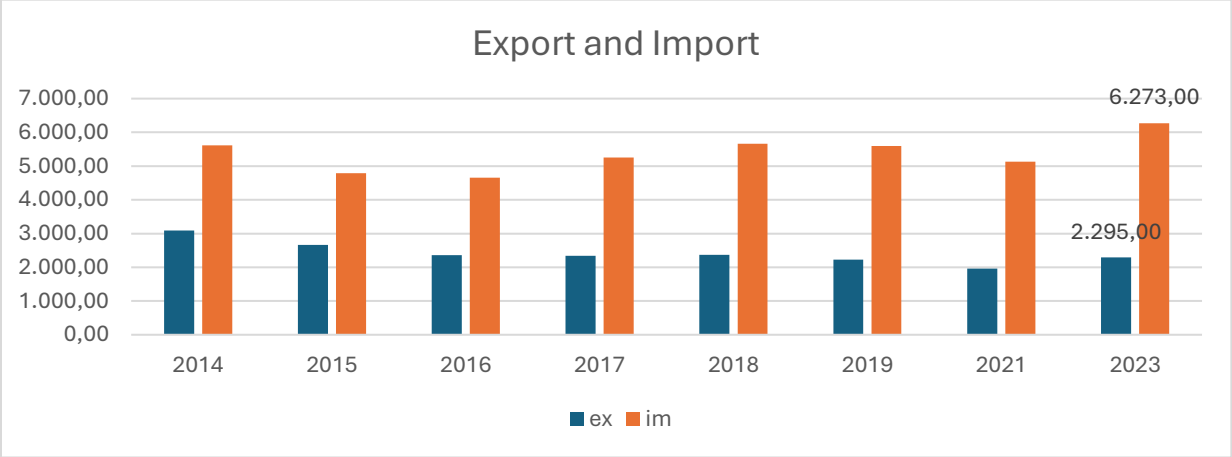
Graph:28



Graph:29

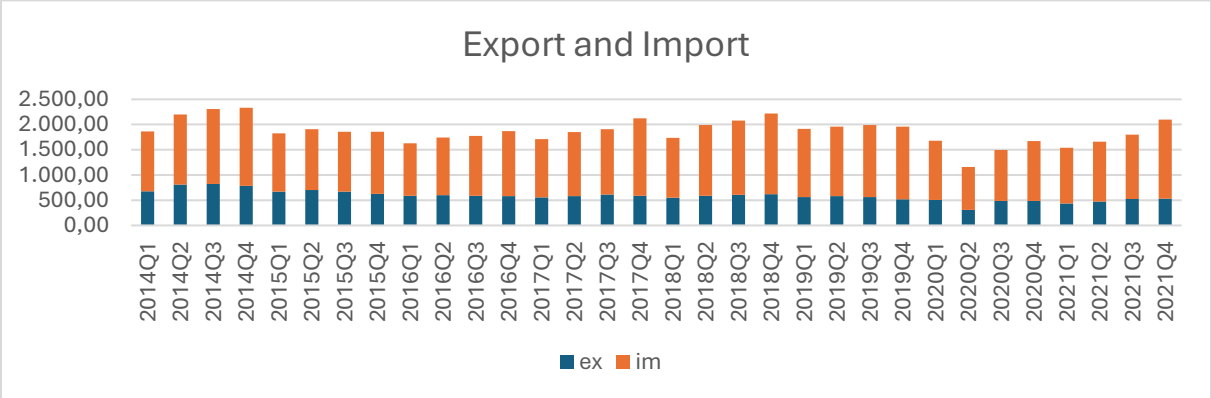
4. EXPORT AND IMPORT OF GOODS AND SERVICES

Imports grow over the years and export falls. The last data shows large discrepancy between two where Import is 6.273 mil and export 2.295 mil USD. Bringing a deficit of 3.978 mil USD.



Graph:30

Exports and import fallows quartal rise and fall making sinusoidal image of trade where in q3 is the largest trade through history.



Graph:31

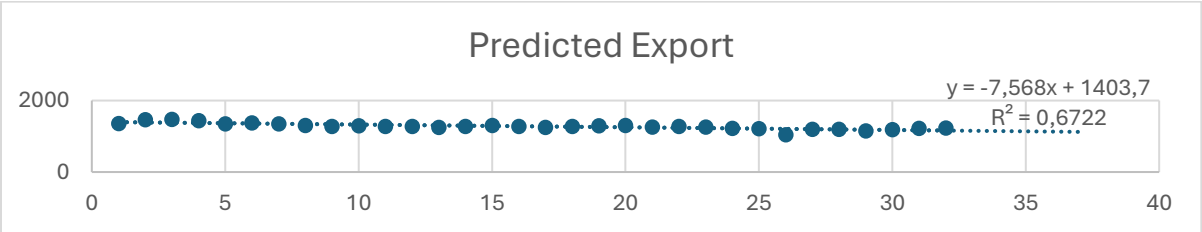
Export= 792,47* 0,82 Import +e

Table 6

	Coefficients	*andard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95,0%*	*pper 95,0%*
Intercept	792,4767	158,913	4,986859	2,42E-05	467,933	1117,02	467,933	1117,02
IMPORT	0,827806	0,26643	3,107029	0,00411	0,283683	1,371928	0,283683	1,371928

REGRESION EXPORT INTERCEPT IMPORT

Predicted export amounts are in line with predicted in all periods except covid times.



Graph:32

Graph:33

ANOVA

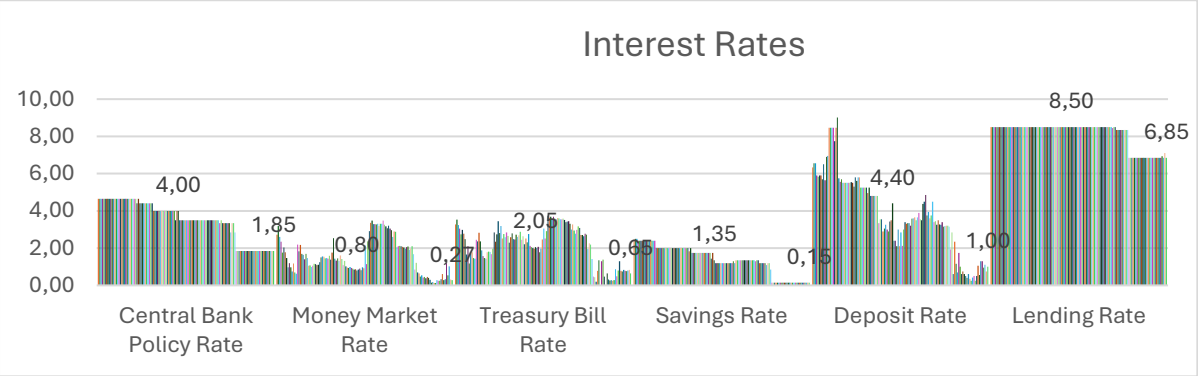
	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	232443,7	232443,7	9,65363	0,00411
Residual	30	722351,2	24078,37		
Total	31	954794,9			

Regression Statistics	
Multiple R	0,493405
R Square	0,243449
Adjusted R Square	0,21823
Standard Error	155,1721
Observations	32

5. CENTRAL BANK AND INTEREST RATES

What further drives and influence economy is Interests rate since they help building new homes, building, institutions, factories hotels, etc.

Central bank interest rate was a long 4 percent and so the lending rate was rather high 8,5 percent. This was in period when in Swiss was negative rate and Europe had all rates under 1. Expensive money to borrow is a hardening step to improve infrastructure and move with projects on.



Graph:34

If we put the lending rate in regression, we have the following results.

Lending rate = -1,1-0,06* central bank rate-0,018* money market+0,9* TB +0,052* saving rate + 0,41*deposit rate +e

Lending rate as dependent variable

Table 7: Central Bank

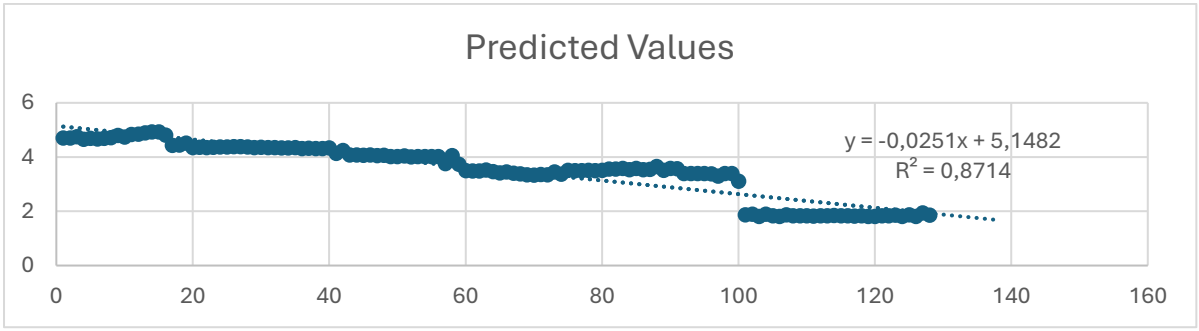
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	-1,1097	0,35464	-3,12908	0,002194	-1,81174	-0,40765	-1,81174	-0,40765
CENTRAL BANK	-0,06785	0,028072	-2,41704	0,017127	-0,12342	-0,01228	-0,12342	-0,01228
MONEY MARKET	-0,01856	0,033424	-0,55543	0,57962	-0,08473	0,047601	-0,08473	0,047601
TB	0,908348	0,061002	14,89046	3,24E-29	0,787588	1,029107	0,787588	1,029107
SAVING	0,052801	0,015478	3,411343	0,000877	0,02216	0,083441	0,02216	0,083441
DEPOSIT	0,410403	0,052223	7,858658	1,73E-12	0,307022	0,513784	0,307022	0,513784

ANOVA

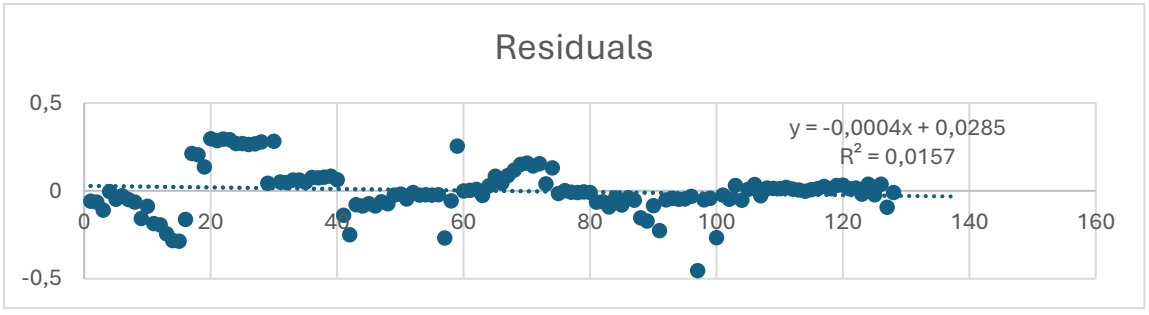
	df	*SS*	*MS*	*F*	*Significance F*
Regression	5	126,7734	25,35468	1421,347	2,6E-106
Residual	122	2,176295	0,017838		
Total	127	128,9497			

Regression Statistics	
Multiple R	0,991526
R Square	0,983123
Adjusted R Square	0,982431
Standard Error	0,133561
Observations	128

What we see if we predict is lowering the lending rate and that process goes in steps like having one point reduced all other follows.



Graph:35



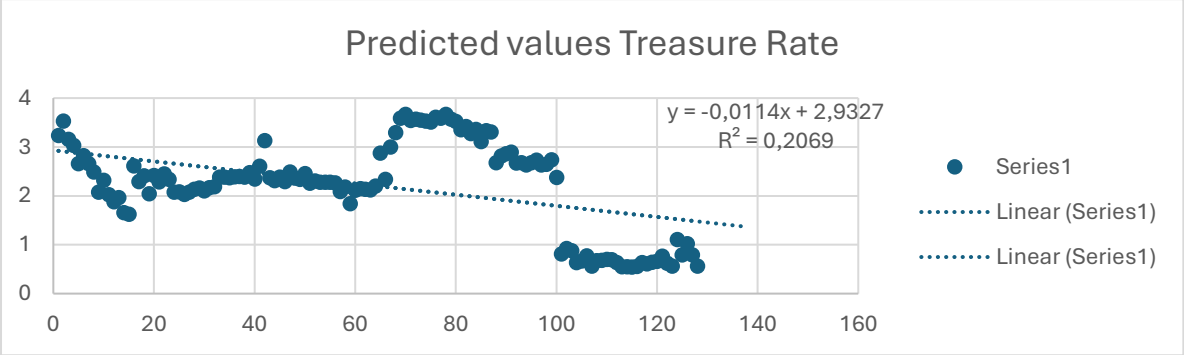
Graph:36

If we put treasure rate as dependent variable linear regression follows:

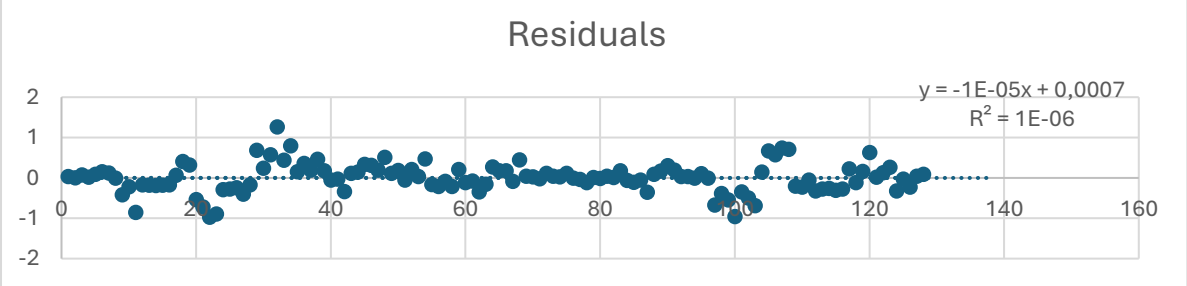
Treasure rate= -3,89-0,14*Central bank+0,63*money deposit-0,45*saving rate-0,12 deposit rate +0,67 lending rate +e

Table: Treasure Rate as Dependent Variable

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	-3,89942	0,932583	-4,18131	5,48E-05	-5,74556	-2,05328	-5,74556	-2,05328
CENTR BANK	-0,13587	0,244619	-0,55543	0,57962	-0,62012	0,34838	-0,62012	0,34838
MONEY	0,634274	0,052401	12,10418	1,22E-22	0,530541	0,738007	0,530541	0,738007
SAVING	0,457893	0,273886	1,671839	0,097119	-0,08429	1,000078	-0,08429	1,000078
DEPOSIT	-0,12343	0,042376	-2,91264	0,004263	-0,20731	-0,03954	-0,20731	-0,03954
LENDING	0,670446	0,162418	4,127901	6,73E-05	0,348923	0,99197	0,348923	0,99197



Graph:37



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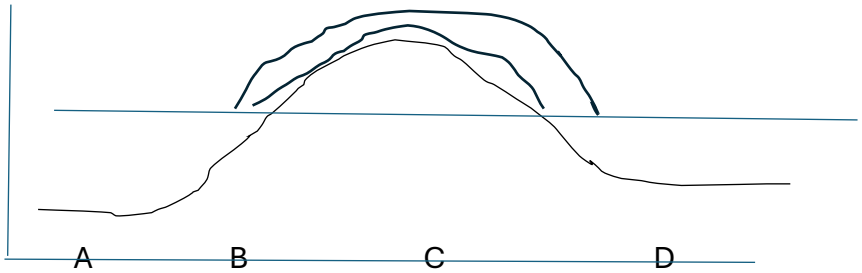
6. NEW WAYS OF FINANCE

6.1 PERSONAL FINANCE

What we need to establish is that personal finance is dependent on the phase of life and state and private possibilities to collect opportunities and spread possibilities. We divide curve into two tales that are the consumer part of equation- kindergarten and retirement and adult life with earning potential. Let's say we have all interest that each individuum reach its highest earning work potential that work beneficial for all in local and global community.



Life can be divided into four parts

A) Newborn baby and kindergarten
B) School and university -making man into deed occupation
C) Work
D) Retirement time

In each time you need to have several opportunities to act and give or take money from social or private funds.

Only C time is working time, and that period needs to finance A B and D time.

In that time C we need to have Fund for retirement that can incorporate state and private funds, and incorporate many possibilities like investing in government bonds, treasury stock, projects etc.

In C time you can take fund medical private state or share between two that can bring medical rights to other groups A, B or D.

Also, C time needs to cover costs of kindergarten and medical support for small babies.

This interaction between working and non-working time can be seen in many various ways.

A in A time you need to have basic medical costs covered

You need to have basic support for kinder clothing or kindergarten if parents are in C group.

You need to know your rights regarding childcare in the first year of child life

B in B time you can choose government state or private school

And have right on basic or private medical care

Parents have allowance on children when need to pay taxes

C this time is working time

You have money that needs to be allocated on path A B and D

So, you need to pay basic minimums to state medical care or school education. Further to decide is amounts to give share with state/private care education.

Similar is time for retirement needs to be covered in this period where you pay various investment funds in order to have money later. You have the right to invest at home abroad, or stable in riskier or more stable investment opportunities - choose between risk is to choose between government bonds or newly issued shares of company. What is needed in this right is that you must have a certain secure fund which will bring you money back and this needs to be monitored by state level and kept above minimum standard rate or over poverty rate. This mechanism is needed to ensure proper old and reward for those who invested energy time in society.

You have the right to choose fund, to pay minimum or increase decrease amount you pay.

There is a level of civil life so this needs to be calculated yearly, you need to know minimum costs of living and in that respect wait for retirement to increase.

Funds can collect funds from people and industries and combine investing and increasing all funds together.

All this reasoning can be further

Number	Personal Finance	Possibilities
1.	How to protect yourself against unexpected events – insure yourself	Proper brackets for insurance-all insured medical accident
2.	Know your rights to obtain subsidies grants	Right information, population that strives and has possibilities is population that progress
3.	Know your obligations regarding taxes	Right information, clear not complicated procedure
4.	Know your obligations regarding pension fees, medical fees	Private state medical with right for state medical for all people, even tourists need to be medically covered and that can mean difference in overall country income
5.	Understanding how loans influence your current future budget	Banks calculate different strategies for each possible situation in life. Progress is possible for all.
6.	Understanding what investment in treasuries, bonds, stock market- how you face risk or have benefits	Information needs to be clear available and with such an investment goal reached- if government issue bonds for construction need to inform investors about that
7.	Having saving account and how that influences your future budget regarding inflation or future security	Saving account and possibilities for local's foreigners Clear about long-term saving rules. Make tax obligations directed on the bank not people etc.
8.	Preparing retirement through various kinds of investment	Various retirement plans proposals for each citizen
9.	Investing in environmentally clean energy or support such groups	Possibility to influence your surroundings with your personal finance decisions
10.	Having financial plans for large purchases such as auto, house, university fee, leasing possibilities etc.	Make different opportunities possible in respect to buying lease contracts, tax deductions etc

6.2 CORPORATE FINANCE

Attracting new customers, potential investors, diversifying the current portfolio, making as clear as possible and available information about possibilities of various investment opportunities are in line with the following new activities:

Number	Corporate Finance	**Possibilities**
1.	Capital budgeting. Having capacity to difference among diverse types of investment possibilities, make or break courage, judgment about current future market needs	Educate and offer possibility to know where to invest, diversify, make certain rules about investment decisions, tax rates brackets and exemptions clear as possible.
2.	Dividend policy- right amount of dividend paid to shareholders, not to sell shares, but to continue with future share options -have mutual trust with owners-build on that	If investors stay with capital, consider various tax exemptions or offer new possibilities
3.	Capital structure- Knowledge to measure financial reports making analysis respectful, and not passing red line in debt/capital ratio; having proper asst liability structure have for purpose right amount or risk reward on current future market	Basic measures needed and offered. Sign to capital owners and state about progress or problems.
4.	Have the right link to bank institutions who provide saving, or investment opportunities	Linkage between capital bank fast and clear rules. Banks can support clients in searching for new investment, spreading existing portfolio.
5.	Have insurance of possible large calamities in transport production market	Transport risk and tariff risk can be ensured. Proper activities and information available.
6.	Having potential to rise over short- or long-term obstacles developing the right approach to problem	State, bank, help available to solve problems in basic services
7.	Having good relations with local communities charging proper standards in social, sport, environment. Behavior pattern	Companies will develop further only if cherish good relationship with people inside the company and outside the company. This is supported in various ways.

8.	Having a pattern of communication with the government to work on possible business opportunities or reduce risk in business operations	Link between long term government strategy or vision with real sector companies who will execute some of work
9.	Following rules of modern finance and market opportunities in that way staying in the market longer like usage of mobile phones, robots, computers used, mobile offices, work at home etc.	It is good to incorporate new technology if it helps but not complicate further daily activities of the company and population. Have plans of various working positions.

Further possibilities can be considered:

A

Besides this basic step we can widen the picture by saying that we need to allow foreign companies to make their place allowing lower profit tax.

In that's respect many companies come together in one sport and this can be further called on a regular basis, offering them ways to work together, to invest together on new projects, to have all the news in respect of possible new tax breaks and possibilities right to act.

Attracting firms who act in their own country risks having large outflows of companies if something happens but connecting them and working on their investment companies stay and large base of work further brings social sector private sector to grow.

B

Giving companies the right to choose between projects

Especially Environmental projects can bring new benefits.

C

All companies have possibilities for workers to pay extra benefits and be allowed in tax system.

D

Companies will deliver dividends, and this is money that is taken locally.

So, if the firm is attracted further ownership can be offered to local funds people employes and dividends who stay locally.

6.3 PUBLIC FINANCE

Public Finance also brings possibilities for further growth and development with time, technology, and human development in respect to be aware of needs and ways to reach goals in the most efficient environmentally friendly way.

Number	Public Finance	Possibilities
1.	Long term strategy	Vision of development in respect of having clear goals, and framework of work. Published goals or paper in local international language.
2.	Incorporate tax policy in line with field possibilities do not overburden population or companies	Have several tax strategies included in its policy. 2.1 Tax for citizens and workers 2.1. Tax for companies 2.2. Tax for banks Attract capital with reducing tax rate, induce investment in certain field by lowering tax rate to maximum.
3.	Clear states expectations aim, willing to cooperate	Public finance needs to have a yearly plan for how to finance its services, have medical care, children, old care development plan and maintenance of existing facilities
4.	Budget transparency	Each year public finance needs to give main figures and plans about what we will do, allowing each year money for special situations like storms accidents etc.
5.	Issuing government bonds	Each year the government needs to consider new project finance and socially based and based on that issue bonds. Continuity in issuing bonds is praxis of good government and stability in keeping under control its long-term plans.
6.	Making large infrastructure	Investing in infrastructure attracts tourists, corporations and small investors further so this needs to be made in respect to long-term sustainability plan.
7.	Ensuring energy stability	Constant thinking about diversifying sources of energy, and

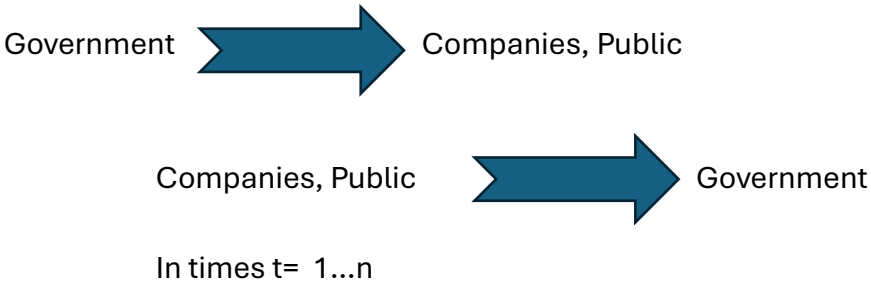
		the possibility for all to have access to main energy resources is needed. Energy comes in close relation with environmental standards and protection, and this is needed in equation under obligatory statement.
8.	Ensuring environmental standards	Standards, measures, ways of allowing things, need to be available to all the population. Standards that limit pollution, obligatory recycling etc.
9.	Aware of all expenditure on own system and future costs	Constant monitoring of costs, and recalculating revenue costs strategies in order to avoid problems
10.	Relation between different finance possibilities	Population can be offered various payment possibilities, by different means and different time frames. Public finance itself can use various types of fiancé opportunities from issuing bonds, loans, reaching domestic or international sources.

All points mentioned above are a basis for having responsible, transparent governmental management system that brings the population on a sustainable path. Having their life in framework of reachable possibilities, opportunities, and the best possible economic -environmental gains that can be reached within certain geographical and time frame.

That means that the government is willing to transparently offer the population the possibility to

- Have social infrastructure that develops further
- Plan for developing kindergartens, schools and hospitals.
- Plan of roads and overall public transport plans
- Plan for constant improvement in environment and energy stability
- Constant work to offer new government bonds that relate to projects and real projects

Government financing can be transparent and offer, beside taxes, investment in government bonds that can mean having interest as earnings. Be aware of two directional conversations with the public and companies, making in that way a cycle of progress.



6.4. QUANTITATIVE OTHER FINANCE METHODS

Modern technology induces financial development. That can be of use to further boost the standard of population, prospects of country and protect social and environmental living.

We have put the world in one minute time difference thanks to satellite technology and that can be of use to collect finance and boost productivity.

Population can vote for different plans, social plans companies profited projects and these two combined with government that emphasis environmental social economic stability and gather project and present in work scale.

New offering in Government bonds, stocks issues, calling investors, offering lower tax profit rates further boosts economy.

Quantitative analysis is constant tools to broaden clear understanding of process and bring regional continental image of progress and investment in cycle.

Number	Quantitative Finance and Other Possibilities	Possibilities
1.	Possibility to measure and calculate different data bases	Compare economic success in region and on the world scale regularly
2.	Approach to many new markets and company data	Establish connections
3.	Approach to possibility to invest	Induce channels of performance
4.	Exotic instrument understanding	Knowledge and use of instruments to increase financial stability not to undermine it
5.	Clear understanding of liquidity in your own case and certain base	Measuring performance and reporting
6.	Have legal protection when protecting your money while investing on world market	Risk when reaching foreign market need to be understood and phased away For foreigners' stability in country for their plans

7.	Developing locally different opportunities for population	Offering finance support and investment opportunities to population
8.	Increase values of good companies by supporting buying	Do not be afraid to stress the importance of good and valuable companies- good praxes can be used to boost performance in other legal subjects
9.	Sell those who make market in decline such as large military environmental danger	Be aware of large drains in budget and decrease negative impact
10.	Computer skills, analytical approach, database opportunity, financial mathematics, models, algorithm, etc.	Models and algorithms, available basic structure on bank site web in that way education and reaching toward new customers

7. CONCLUSION

Our financial world started with the first money in the form of wheat, grain, gold, valuable. It continued in the cradle of civilization in Mesopotamia where lending the valuables was followed by interest rates imposed. The coins were stamped with the image of tzars and important people and in the form of various metals. IN the 1531 Belgium opened the first Stock Exchange and this was followed years after in London New York.

This was only a prelude to the current situation but firmly rooted in our life.

Mauritius Rupee lowers its value in the last 10 years compared to USA USD. Similar trend is observed in all neighboring country except from Australia, China, Europe.

Rising inflation added harm to currency strength and was primarily due to instabilities in macro picture but also indicate country weaknesses.

It was calculated that with a rising inflation the level of unemployment decreases but is now at 6-7 percent what is not insignificant.

Country strength is represented by GDP and in the last 10 years GDP has risen constantly. The most significant rise is in household expenditure, after comes government spending. The level of exports and imports are the same, leaving imports at a high rate.

Country needs to strengthen development further rising GDP in more qualitative way like production and further drift from weaknesses such as tourism as only strong income. Measures to improve are various. Paper indicated four directions. Personal finance can improve with having clear taxes obligations and saving policies that's support stability but also boost investment in new sectors or improve social facilities. The population that is fully employed, satisfied with employment possibilities, reach further for various types of entrepreneurial activities and financial investment. Connection between business and social sectors between various sectors, government bank corporation corporate finance directed toward wanted project induced by lowering taxes. Attracting capital with no tax or lo tax policies. Using such capital to boost investment in clean strategies. Always making the best approach toward the environment and remembering that sea and land needs to be kept clean and humans are only time passengers here-

not overreaching natural capacities. Public finance should have clear long term published plans, motives, government be in line with constant boost of investment issuing bonds and using money to increase public facilities and factories.

The importance of tourism is by far the largest but is harmed with macro instability. Tourism needs to be induced with constant environmental protection, investment in capacities that serve both human and nature.

In era of satellite and internet countries need to use additional possibilities to reach capital and advance the economy.

Literature:

-Mauritius Government web pages

-Wikipedia

-African Bank

-Financial Literature at ideas.org, mpra.org