The Relevance on assessing Real Exchange Rate Misalignment under lessons from covid-19 crisis

Kuikeu, Oscar

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Oscar Valéry KUIKEU
Advanced School of Economics and Commerce, University of Douala (Udo, Cameroon), Po box 1931 Douala (Cameroon), Port. +237 698 60 41 40, émail: kuikeuoscar@gmail.com

Abstract. *It's well established that the current period of covid-19 crisis is an one of not yet observed about the assessing on relevant concept as Exchange Rate behavior. In facts, since Edwards (1989) the dynamism of them are governs by relevant economic fundamentals in general called fundamentals as the structural reforms policies undertaken as resilience measure against covid-19 crisis. Thus what is the meaning to assess on the Relevance of this approach? Due to little theoretical consideration what can be about the adequate method or technic for address on this issue? These are the main questions we are trying to answer, here. Globally speaking, the taking into account at the theoretical level of consideration as the honeymoon effect is relevant in the sense that the empirical methodology lies on this kind of theoretical consideration.*

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1. Introduction

By comparing Real Exchange Rate behavior observed to the equilibrium path we have an idea on the Real Exchange Rate Misalignment otherwise figure as episodes of Over/under valuation of the currency. The idea came from the law of unique or one price but today Advocated with the stylize fact that the underlie law is observed just for the openness sector. Considering the Broad sectors in the economy as a whole it's "fundamentals" who drive Real Exchange Rate behavior observed because they are those who are related to the Rejection of this law coming mainly from the Balassa-Samuelson effect about the tendency of going over the unity in consideration of the differentiate price competitiveness between the local and the foreign economy.

The Coronavirus crisis have undertaken on this kind of consideration with the adjustment process in price as result of shocks operated in the Supply and the demand side of the economy. At this stage the northern economies are concern with the immunization process coming from vaccine where the allowance going for the accessibility of this vaccine in Regions outside of his national borders with concern for LDC as the covax initiative for Africa. Sign that one concern about the "fundamentals" is the level of investment because this have well drive the production of vaccine and the concern in non-industrialized one's about the traditional medicine or the silent modernization in technical material for the needing operation and concern about the therapeutic concern with the manifestation of coronavirus and to put concern on population against the need of respect on barriers

measures. Nevertheless the control of the following "fundamentals" in inflation and investment level have required that the nation have donation from institutional organization in face of the crisis concern by the coronavirus with one of the manifestation as lack in external reserv.

With these "fundamentals" at the shed line he have been able to proceed in the measure in Misalignment conform to that attempted in the historical monetary cooperation with France for economies as Cameroon, Gabon, central African republic. Nevertheless as Agreement on Monetary Arrangement one road to improve on this exercise is to take at the heart the question of honeymoon effect who revealed that the Agreement stabilize well the Exchange Rate than the floating pure system. In fact, we think that this theory gives emphasis on using Break point in assessing on cointegrating relation between the two side involved in calculating Misalignment, in the one hand the observed Real Exchange Rate and in the other the "fundamentals". Therefore is this true the undervaluation due the adjustment in the currency of January 1994 should have much great emphasis than the case of non taking into account of this honeymoon phenomenon.

To assess on this exercise we use the cointegration technique of Johansen extend to taking break into the cointegration system by Johansen, Mosconi and Nielsen (2000). The Rest of the paper is organized as following, in the next section (section 2) the presumption of using cointegration technic with Break as relevant issue to undertaken on the honeymoon phenomenon. The section 3 goes in the empirical assessment. Section ' as concluding Remarks give some guidelines for proceding with Exchange Rate issue where the issue of a Break point is engaged.

2. The honeymoon effect : the relevance for using on cointegration technic with Break point

Following Johansen, Mosconi and Nielsen (2000) a series given as stationary around a breaking constant level is better describe as unit root series. The main issue is that the point at which this break occurs on the series consider is on the nominal exchange rate regime concern with the date of 1994 revealed as one of this. To this fact the honeymoon effect appears thus as one of theoretical concept for assessing on the relevance of estimated Misalignment in the sense that is criterion is given by the fact that if he holds therefore the undervaluation on this date must be most relevant when this is taking into account. To address the issue we can just consider on the plot time series for Real Exchange Rate who clearly exhibit a broken trend at the date where the devaluation took place in 1994. While for the other components of the cointegrating system namely the "fundamentals" this issue is not observed raising the idea that the nominal agreements on the Exchange Rate are playing primarily on Real

Exchange Rate behavior observed. This issue come to fostering the idea that is the External Real Exchange Rate (ERER) to the opposite of the Internal Real Exchange Rate (IRER) who is more relevant for the analysis. In fact, the passthrough effect of the nominal adjustment on the local prices have well play in the case of ERER where the calculation lies on a composite index of prices for the consume goods by the economic agents contrary to the IRER. Another piece of evidence concerning the position of this Rate of ERER is that the upcoming event of a single currency unit in Europe since 2002 is another piece of concern for the honeymoon effect because this event appears as an another adjustment place into the RER in the sense of nominal devaluation and this appears clearly into the plot of the ERER. For these facts the honeymoon effect constitute thus one of favorable issue to undertaken the calculation of Misalignment with an available criterion of relevance in the sense that if he holds thus the estimate Misalignment at this date must be much more valuable without this need place in an arrangement about currency. Another concern is that we can consider the Advent of the single European currency unit as one of period preceding a system of pure floating where the anchor currency at this time should to float compare to the others in the Monetary system but also with the other species already existing before this Advent.

3. Empirical assessment

The first consideration is to validating the preceding development by the plot of time series for the RER and the issue of existing break point in the trend for this serie. The data concern the two majors namely Cameroon and Gabon economies observed between 1980 – 2019 for Cameroon and 1980 – 2005 for Gabon. We use data on gross fixed capital formation as measure of investment level, the consumer price index changes as inflation, and the current account balance as the nation's external position. The data come from the online Data set of the World Bank World Development Indicator (WDI).

He clearly appear that as well as for Cameroon and Gabon the series of RER have a trend change in 1994 the date of nominal adjustment. To confirm on the stylized fact we employed the Unit Root test with structural Break at an knowing point choose here as 1994 in the one hand and 2002 in the other. The Results are the following

Table 1: Unit Root test with Break in 1994

		Cameroon				Gabon			
		(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Test statistic	Trend	-2.50	-3.52**	-3.77*	-3.63*	-1.09	-1.95	-1.90	-2.46
	Constant	-1.44	-3.95*	-3.81*	-3.19*	-1.56	-2.57	-2.75***	-3.10**
Break point		1994				1994			

Source: *(**, ***) null hypothesis is rejected at 1% (5%, 10%) level of significance. (1) impulse dummy (2) Shift dummy (3) Exponential Shift (4) Rational Shift. Lanne et al. (2002) critical values

Table 2: Unit Root test with Break in 2002

		Cameroon				Gabon			
		(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Test statistic	Trend	-1.98	-2.65	-1.94	-3.58*	-1.46	-2.02	-1.28	-1.64
	Constant	-1.34	-3.22**	-1.21	-3.01**	-1.57	-2.40	-1.43	-1.47
Break point		2002				2002			

Source: *(**, ***) null hypothesis is rejected at 1% (5%, 10%) level of significance. (1) impulse dummy (2) Shift dummy (3) Exponential Shift (4) Rational Shift. Lanne et al. (2002) critical values

Evidence of Break point in 1994 as well as in 2002 is well assess for Cameroon contrary to Gabonese economy where this is not observed in 2002.

This is just testing result. For controlling on the analysis further in order to assess on the issue we use cointegration test with Break. The well known Johansen Trace test in the one hand and in the other the Saikkonen and Lütkepohl Test (Saikkonen and Lütkepol 2000). The following Tables 3 and 4 contains the results:

Table 3: Saikkonen and Lütkepohl Test

r	LR	p value
0	151.30	0.00
1	73.71	0.00
2	28.48	0.00
3	0.03	0.90

Source: LR is Likelihood Ratio, *r* the cointegrating rank. Computations made on the basis of Response surface

Table 4: Johansen Trace test with break in 1994

R	LR	p value
0	68.55	0.00
1	34.59	0.24
2	20.77	0.17
3	8.72	0.21

Source: LR is Likelihood Ratio, *r* the cointegrating rank. Computations made on the basis of Response surface

The following Tables are just for Cameroon country on the belief that is it that need to be check for Robustness in fact remember that just the residual analysis have been used yet in the preceding Kuikeu (2021) and therefore the analysis suggested using Johansen Multivariate cointegration technic to assess on the relevanve of the preceding results. Because the statistics with break eventuality have been well check and conclude to the existing of one cointegrating relation we just need to restricted the constant term on evaluating this kind of cointegrating relation who is the following:

$$LRex = 7.83 - 1.047LGFCF + 0.016\text{Inf} - 0.005\text{CA}$$

Where *L* is natural logarithm, *GFCF* as measured of investment, Inf the inflation rate, CA the current account.

Figure 1: equilibrium

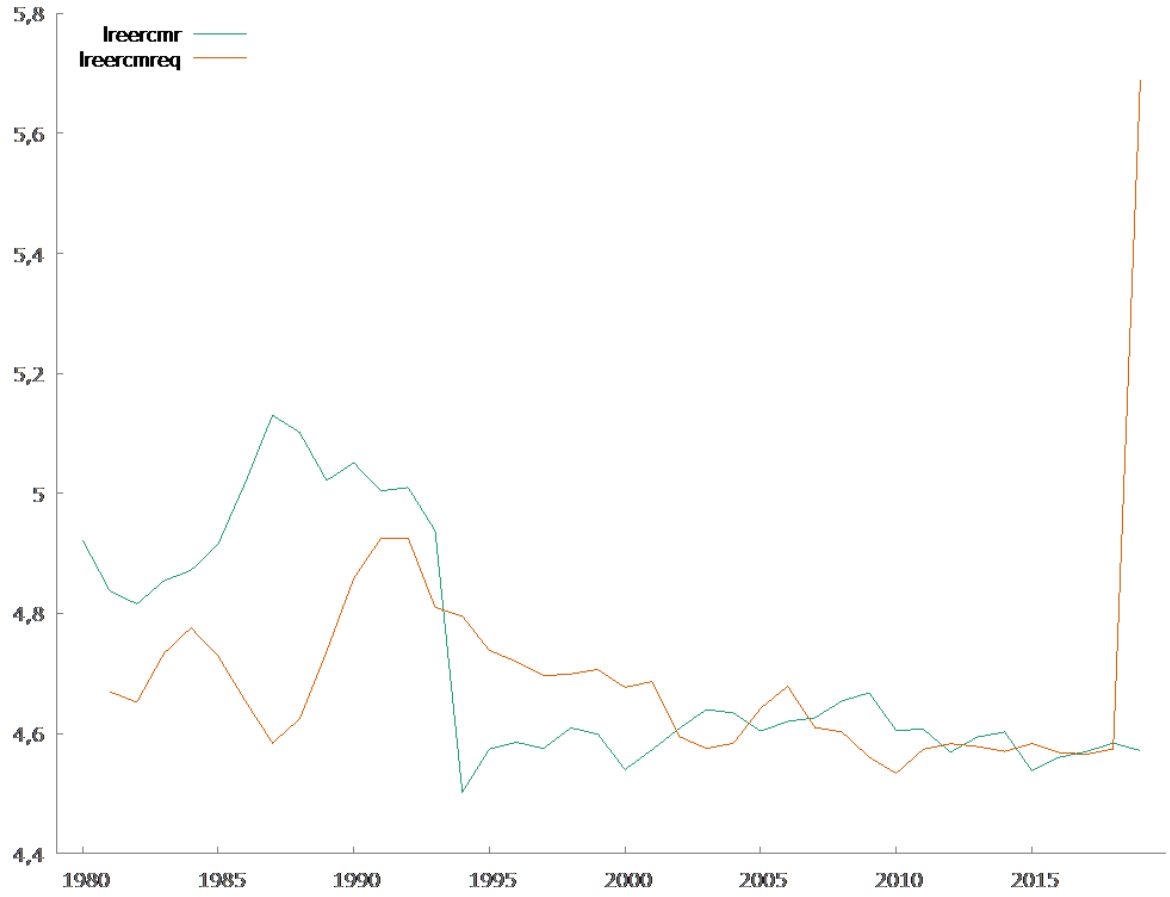
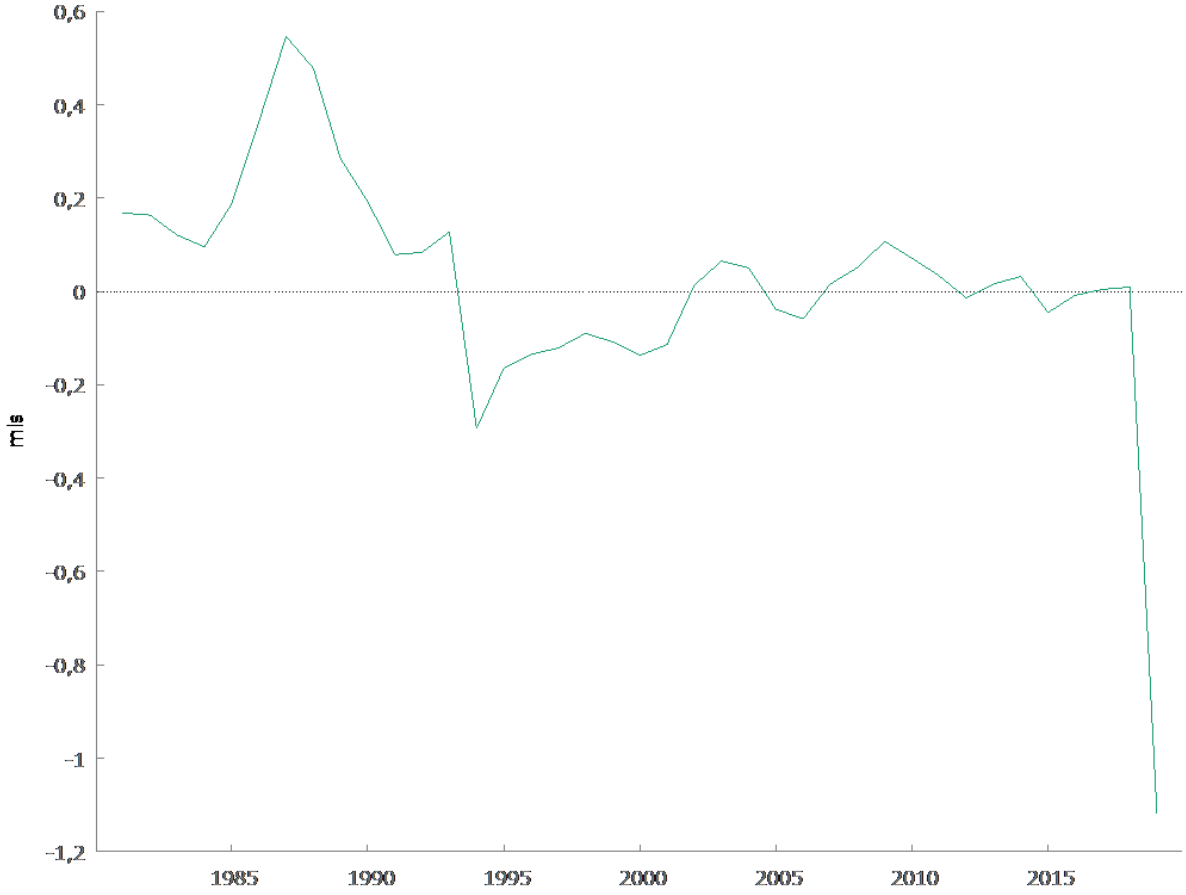


Figure 2: Misalignment



4. Conclusion

This idea put on the honeymoon effect to assess on the Relevance of the preceding construction is so valuable. In fact the stylized facts are well reproduce with exactly the beginning in the upward trend (Overvaluation currency) of the *Rex* just since 2002.

5. References

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