Befriending the Dragon: Investing into Chinese financial assets like onshore bonds

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Dirk-Emma Baestaens, PhD.
ICBC (Europe) S.A. Brussels Branch
Head FID
Pai Li
Intern

Executive Summary

- This paper shows from a quantitative perspective the contribution of investing into Mainland China's onshore bond indices (sovereign and credit) to the performance of a hypothetical long only, longer duration local "Western" investment portfolio (called base or home portfolio) consisting of cash, fixed income, equity and alternatives.

- Over our 10 year time horizon up to June 2024, investing into China's onshore bond indices yields an **additional return of 12bps conjointly with a 64bps risk reduction** compared to our hypothetical yet efficient base portfolio.

- Explanatory factors may be that (1) both onshore bond indices exhibit very large positive Sortino values and that (2) both onshore indices tend to be very lowly correlated to "Western" assets,

- The good news is that even in times of world-wide stress like the period of the Russian-Ukrainian conflict, Mainland Chinese assets tend to remain deconnected from the global investment world.

- Obviously there is no free lunch. Investing into Mainland China means higher FX risks (€/CNY) and may open the debate on geopolitical issues, which we do not address here

Set Up

Question ?

How to convince local Belgian long term investors to consider adding Chinese financial assets, in whatever format (funds, fixed income or equity) or currency (HK$, CNH, CNY) to their portfolios?

Strategy ?

We start with a typical Western portfolio (called **BASE** portfolio) to which we iteratively add (respectively delete in turn) in increasing magnitude of risk to compute our portfolio performance

- € or USD denominated equity or bond ***funds*** playing the China theme,
- the HKD denominated ***Hang Seng Index***,
- ***off-shore USD*** Chinese bonds,
- ***on-shore CNY*** government or credit bonds, and finally
- the ***CSI300 stock index***.

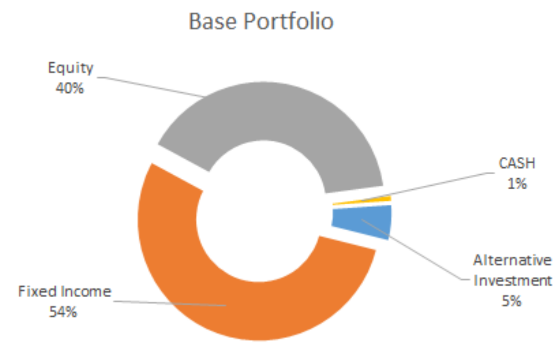
Answer ?

Chinese asset returns' **positive Sortino values as well as their low correlation** value with that of traditional Western asset classes make Chinese (bond) indices the preferred choice to diversify away existing portfolio risk.

We now report on the winning strategy, namely investing in onshore CNY bond indices.

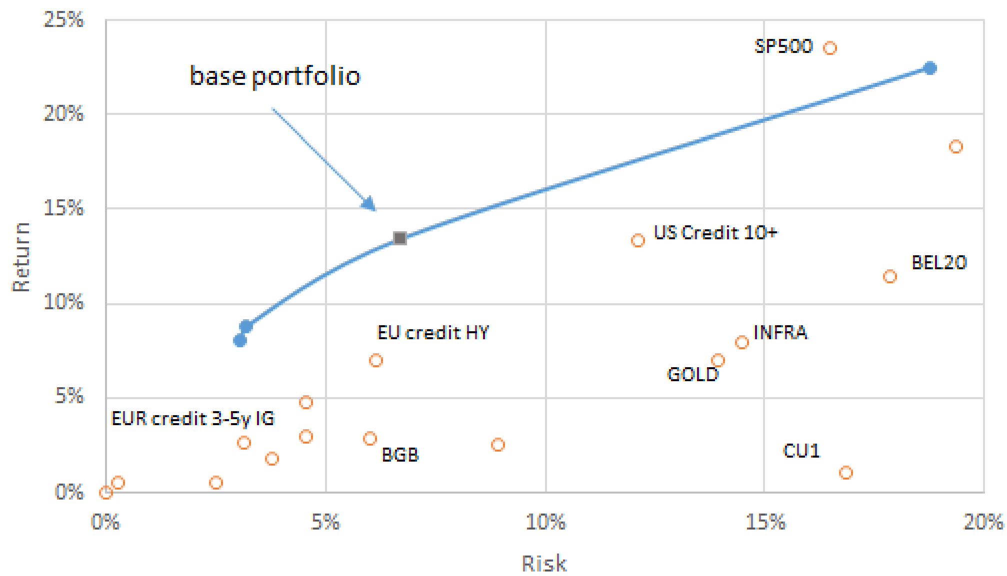
Data Sources – Base Portfolio – Indices

- Using Bloomberg, we extracted weekly values for 54 indices of which 25 Chinese linked indices
- Period runs from 03/01/2014 to 21/06/2024, so slightly more than 10 years
- Chinese linked indices' sources are either Bloomberg or ICE BofA
- By construction, the base portfolio excludes Asian (of which Chinese) assets
- Our base portfolio then consists of a mix of fixed income, cash, equity and alternative investments denominated in either US$ and €,
- Our optimized base portfolio yielding a maximum return under constraints consists of 11 assets.
- This simplified portfolio may be typical for a long term agressive investor with minimal cash position and some gold, infrastructure,
  55% longer term bonds both IG and HY
  and finally 40% equity.
- Details on next page



Data Sources – Indices – Portfolio Optimization Take-Aways

- Classical constraints do apply, such as
  - No negative weights, with single asset weights within the [0%;20%] range,
  - Equity exposure of DAX + BEL20 + S&P500 cannot exceed 40% ,
  - Even the maximum return portfolio is somewhat constrained with single weights set to [0%;80%] and the equity exposure equal to 100%.
  - Cash alternatives like 3M Euribor are deemed riskless
- This local long term western portfolio yields a Sharpe ratio of 2 with a return of 13.44% and risk of 6.7%
- Share indices as well as US long credit performed well over the last 10 years resulting in good Sortino ratios.



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Data Sources – Indices – Base Portfolio – Weights & Return/Risk metrics

#	Ticker	Name	Long Name	Type	Weight	Subweight	Sharpe	Sortino
1	INFR LN Equity	ISHARES GLBL INFRASTF	iShares Global Infrastructure	Alternative Investment	4,9%		0,41	0,55
2	CU1 Comdty	Generic 1st 'CU' Future	Generic 1st 'CU' Future	Alternative Investment	0,0%		-0,05	-0,08
3	XAU Curncy	Gold Spot $/Oz	Gold	Alternative Investment	0,1%	5,0%	0,36	0,56
4	LF94TRUU INDEX	Global Inflation-Linked	Bloomberg Global Inflation-Lin	Fixed Income Index	0,3%		0,07	0,09
5	BCEB1T Index	Blgn Government	Bloomberg Belgium Govt All Bon	Fixed Income Index	1,5%		0,15	0,22
6	LD07TRUU Index	Long	Bloomberg Long U.S. Corporate	Fixed Income Index	20,0%		0,94	1,09
7	LP01TREU Index	Pan-European High Yiel	Bloomberg Pan-European High Yi	Fixed Income Index	19,9%		0,82	0,81
8	I02554EU index	3-5 Years	Bloomberg Pan-European Aggrega	Fixed Income Index	1,8%		0,21	0,23
9	I02555EU index	5-7 Years	Bloomberg Pan-European Aggrega	Fixed Income Index	10,5%		0,61	0,66
10	G3O2 index	5-7y US Treasury	ICE BofA 5-7 Year US Treasury	Fixed Income Index	0,0%		0,21	0,32
11	G2D0 index	3-5y Germany Govt	ICE BofA 3-5 Year German Gover	Fixed Income Index	0,0%		-0,59	-0,75
12	G3D0 index	5-7y Germany Govt	ICE BofA 5-7 Year German Gover	Fixed Income Index	0,0%	54,0%	-0,04	-0,05
13	BEL20 Index	BEL 20 INDEX	BEL 20	Equity Index	0,0%		0,53	0,66
14	SPTR Index	S&P 500 TR 4 JAN 1988	S&P 500 Total Return 4 JAN 198	Equity Index	20,0%		1,31	1,63
15	DAX Index	DAX INDEX	Deutsche Boerse AG German Stoc	Equity Index	20,0%	40,0%	0,84	1,05
16	EUR003M INDEX	Euribor 3 Month ACT/36	Euribor 3 Month ACT/360	CASH	1,0%		NA	NA
17	SPBDUB3T Index	S&P/BGC 0-3M US TBill	S&P U.S. Treasury Bill 0-3 Mon	CASH	0,0%	1,0%	NA	NA
						100,00%		

- The Base portfolio retains some Belgian Government bonds, inflation linked bonds, long duration US and EUR credit, European High Yield, German and US stock market indices, Infrastructure ETF, some gold and cash.
- Obviously this Base/Home portfolio is for illustrative purposes only.
- Question remains whether its performance in both risk & return terms can be improved by adding Chinese assets?

Data Sources – Performance – Base Portfolio – Extended Portfolios

- Using the 17 available indices we computed the standard efficient portfolios namely the maximum return, minimum risk and highest Sharpe by adapting our constraints.
- Performance is given below for all these efficient portfolios. At this point there are no Chinese assets.
- After iteratively including the Chinese assets, we observe that the various extended portfolios cannot beat the efficient portfolios' performance **but both return and (or) risk metrics can be improved by**
  - **Including onshore bonds: additional return of 12bps with 64bps risk reduction**
  - Including offshore bonds: additional return of 14bps but with 2bps risk increase (second best)

- We now provide more details on these extended portfolios, that is our base portfolio including the onshore bond indices

	#	PORT RISK	PORT RETURN	NAME	SHARPE	Weight CHINA	Max Weight	Weight DAX+Bel20+S&P500	Weight ALTERN	Currency
EXCLUDING ASIA	BASE	6,70%	13,44%	Max Return constrained	2,006	0,0%	20,0%	40,0%	5,0%	€ ; US$
	Portfolio 1	18,77%	22,50%	Max return unconstrained	1,199	0,0%	80,0%	100,0%	0,0%	€ ; US$
	Portfolio 3	3,20%	8,84%	Highest Sharpe	2,760	0,0%	20,0%	40,0%	5,0%	€ ; US$
	Portfolio 4	3,07%	8,11%	Min Risk	2,646	0,0%	20,0%	40,0%	5,0%	€ ; US$
Including China	Portfolio 6	3,23%	8,80%	Max Return with 3 "Western" China funds	2,722	1,0%	20,0%	40,0%	5,0%	€ ; US$
	Portfolio 7	5,50%	12,30%	Max return with HSI	2,238	1,0%	20,0%	40,0%	5,0%	HK$
	Portfolio 9	6,72%	13,58%	Max return with offshore bond	2,021	7,2%	20,0%	40,0%	5,0%	US$; CNH
	Portfolio 10	6,06%	13,56%	Max return with onshore bond	2,236	11,2%	20,0%	40,0%	5,0%	CNY
	Portfolio 8	5,53%	12,49%	Max return with CSI300	2,260	0,5%	20,0%	40,0%	5,0%	CNY

Data Sources – Performance – Base Portfolio – Adding On-Shore bond indices

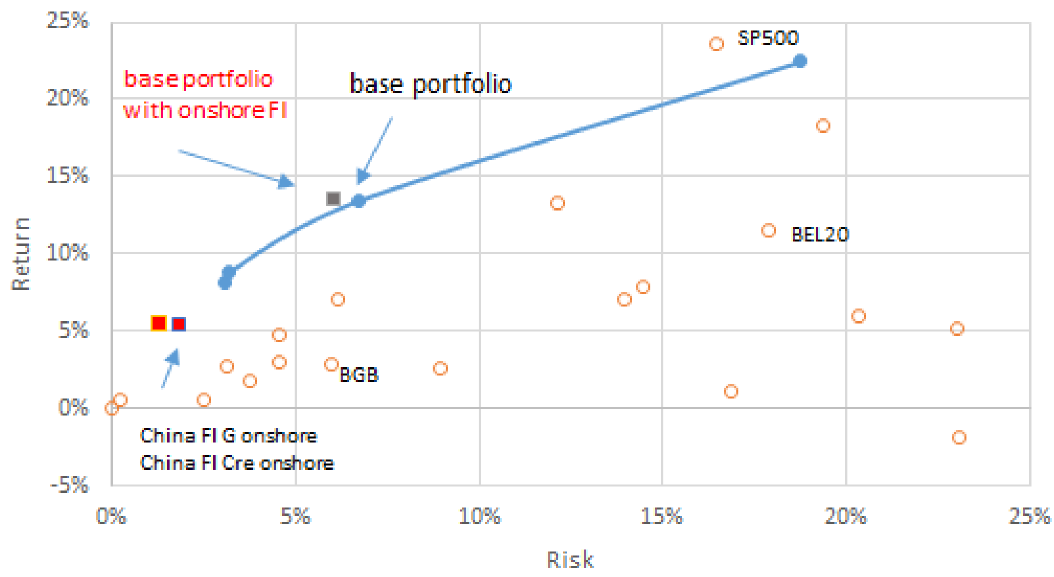
We now add two Mainland China bond indices, namely one government and one credit. The investor now bears full operational and FX risk as these indices are denominated in CNY.

#	Ticker	Name	Long Name	Type	Weight	Subweight	Sharpe	Sortino
24	I08272CN INDEX	Government-Related	Bloomberg China Government To	Chine FI G Onshore	5,7%		1,89	2,45
25	I08275CN INDEX	Corporate	Bloomberg China Corporate Tota	China FI Credit Onshore	5,5%	11,2%	2,66	3,45

This portfolio yields a higher return
………at less risk

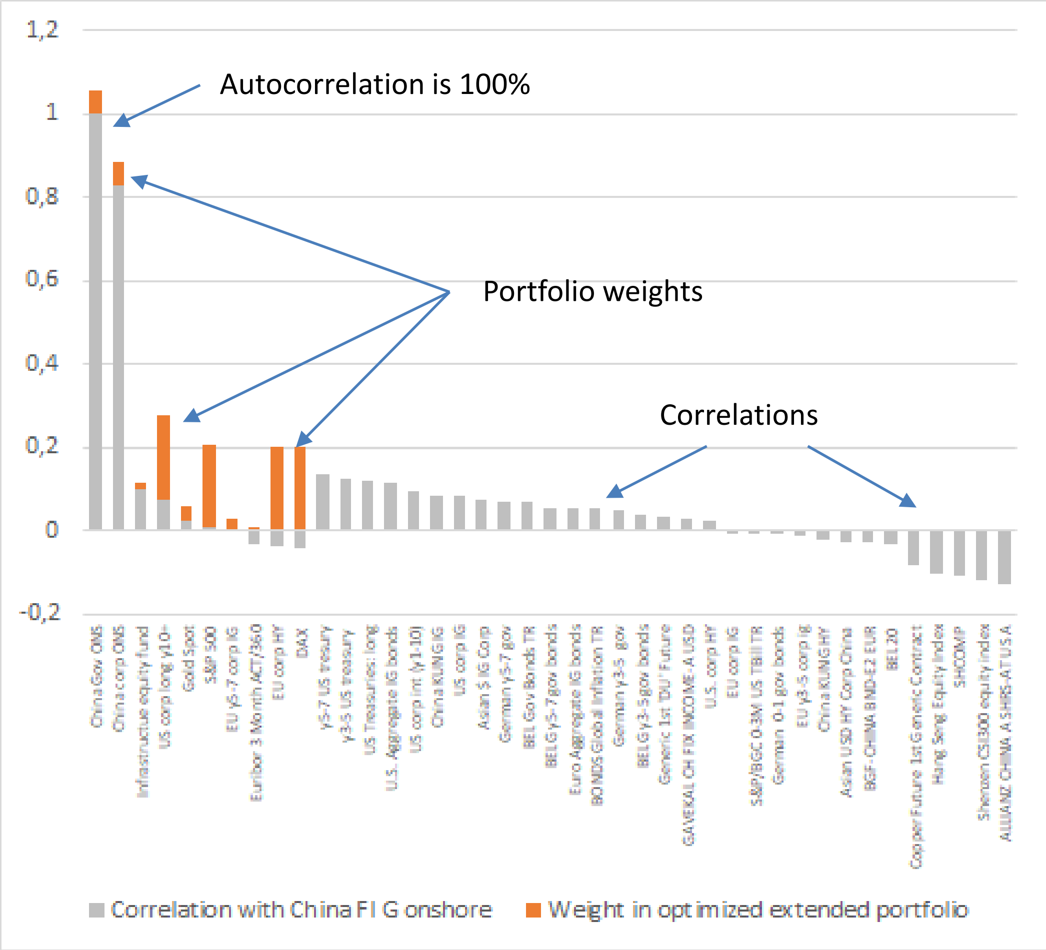
- Ignoring other parameters such as geo-political issues, adding onshore fixed income makes sense, even accounting for FX risk

- One reason is that the respective Sharpe (or Sortino) ratios are well above 2.



Data Sources – China Onshore Investment – Decorrelation is key driver

- Correlations between the China FI government (and credit) onshore bond indices and the other indices tend to be very low or even negative,
- These low or even negative values help explain why the impact of the onshore bond holdings are instrumental in improving the risk/retrun metrics of our base(home) portfolio, even ignoring the fact that their Sharpe (Sortino) ratio are well above 2,



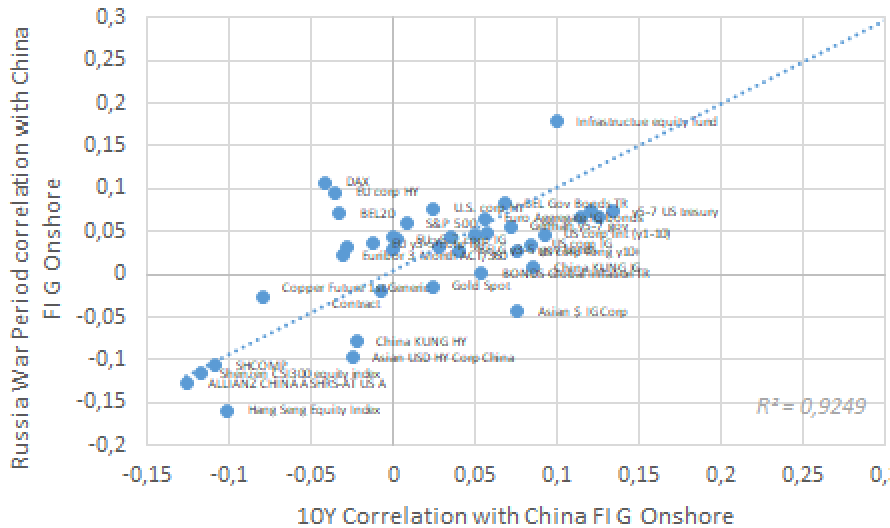
Performance – China Onshore Markets –Decorrelation Stability ?

- It may be argued that the decorrelation or deconnexion between the Mainland onshore markets and the rest of the World is not perpetual and may vary through times hereby reducing the attractiveness of investing in Mainland China,

- Therefore we observe the performance metrics and correlation values for a recent period of **great stress, namely the start of the Russia-Ukraine conflict** at end February 2022 until 21.06.2024,

- Overall correlation coefficient values between the China Mainland Government bond index on the one hand and the other non-Chinese indices remain very stable as the correlation values for the two periods remain close to the 45° line,

- So we are confident investing in Mainland China onshore bond indices makes sense from a portfolio perspective.



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ICBC Brussels Branch FID Team Contacts

Dirk-Emma BAESTAENS Ph.D., Head Financial Institutions, Financial Institutions Department
Tel: +32 2 539 8873 | Mob: +32 478 885 783 | Email: dirk.baestaens@be.icbc.com.cn
Obtained his Ph.D. in Business Economics at the Alliance Manchester Business School after which he became assistant professor of finance at the Erasmus University, Rotterdam where he co-authored Trading Neural Networks in Financial Markets. He then joined BNPP Fortis bank where he headed the credit risk quant group before joining the trading room where he was in charge of the Client Solutions Development Group within the sales derivative & structured products entity focusing on rates & FX . In 2016 he joined Belfius Bank, the only Belgian state bank to develop the FIG activities where he mainly focused on custody and lending solutions. Early 2021, he joined ICBC (Europe) Brussels.

ROUSLAN Akhmethsin, Relationship Manager Financial Insititutions Department,
Tel: +32 2 539 88 72 | Mob: +32 484 163 991 | E-mail: rouslan.akhmetshin@be.icbc.com.cn
Obtained his Master degree in Applied Economics at the University of Antwerp. He started his career at Deutsche Bank as an advisor in retail and personal banking in investments. He then joined Private Insurer, a branch 23 insurance company, as a fund accountant where he was responsible for middle and back office activities. At the beginning of 2020, he joined ICBC (Europe) Brussels where he has developed considerable expertise in client onboarding and associated compliance issues.

MA Cheng, Senior Manager, Financial Institutions Department,
Tel: +32 2 539 88 92 | Mob: +32 473 308 696 | E-mail: ma.cheng@be.icbc.com.cn
Obtained his Master degree in Ocean University of China, Majored in Business Administration. He joined ICBC Qingdao Branch in 2012, worked as a cashier, operation director, manager of a second-level branch since then. He is an intermediate economist in China, and is familiar with economic and financial related knowledge. In 2023 he was expatriated to ICBC (Europe) Brussels.

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