

## Summary

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I am a senior vice president, Ph.D. quantitative strategist, specialized in asset allocation, portfolio construction and macro-quant modeling. I work for GIC, the sovereign wealth fund of Singapore.

I belong to the Fixed Income and Multi-Assets (FIMA) department, where I develop quantitative models for portfolio construction and assets allocation, supporting the daily management of USD multi-billions portfolios.

I also design and implement quantitative macroeconomic signals (forecasting, nowcasting, regimes modeling, etc.) and leverage density modeling and optimization methods for asset allocation. I handle backtesting, package deployment and some quant production-related issues.

I combine technical skills in financial modeling, programming, and quantitative macroeconomics with more than 10-year operational experience with [ADIA](#) - the sovereign wealth fund of Abu Dhabi, the [International Monetary Fund](#) in Washington D.C. and the [European Central Bank](#) in Frankfurt.

## Professional Experience

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**GIC** Senior Vice-President, Quantitative Strategist Singapore, Since 2023

Fixed Income and Multi-Assets (FIMA) department

Quantitative multi-asset allocation and portfolio construction

Macro signal generation: nowcasting, forecasting, macro risk modeling, etc.

**ADIA** Quantitative Researcher and Developer Abu Dhabi, 2022-2023

Multi-assets allocation and portfolio construction for ADIA Quant team ("Q")

Macro signal generation: nowcasting, forecasting, risk modeling, etc., data curation

**International Monetary Fund**, Quantitative Economist Washington DC, 2016-2022

Quant economist and technical assistance mission chief in the Monetary and Capital Markets department, leading teams of 3 to 7 people

Missions to 25 countries: macrofinancial modeling, IMF lending programs and technical assistance to central banks on quantitative methods

- Foreign reserves management and foreign exchange interventions
- Liquidity management (liquidity forecasting, demand for reserves estimation)
- Monetary, macroeconomic and financial modeling under Python

**European Central Bank**, Quant Economist & Portfolio Manager Frankfurt, 2013-2016

Foreign reserves portfolio manager, Eurosystem Asian currencies portfolio

Portfolio management and tactical allocation

Portfolio optimization, risk modeling, forecasting

## Education

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**Ph.D. in Financial Economics**, Peking University and Paris School of Economics

*Six years in Beijing, entire curriculum taught in Chinese Mandarin*

**M.Sc. Quantitative Financial Economics**, Ecole Normale Supérieure de Paris-Saclay

*Normalien, ranked first at France's national competition entrance exam*

**M.Sc. in Statistics and Applied Mathematics**, ENSAE Paris

*Master thesis on density modeling, numerical simulations, resampling and bootstrapping*

**Undergrad - CPGE**, Henri IV Paris

## Teaching

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**FX Intervention Rules: A Risk-Based Framework**, IMF Singapore Training Institute (STI) (2023)

29 participants from 14 central banks; 1-week training in Singapore

Modeling under Python, with a package we developed with [Amine Raboun](#): [pypi link](#). Link to the [course](#)

**Forecasting Framework Central Bank Systemic Liquidity** IMF Singapore Training Institute (STI) (2022)

16 participants from 12 central banks; 1-week training in Singapore

Modeling and forecasting under R

**Advanced Statistical Methods to Forecast Systemic Liquidity (2022)**

*IMF Technical Assistance Center in West Africa, AFRITAC West, Accra*

**Advanced Statistical Methods to Forecast Systemic Liquidity (2022)**

*IMF Center of Excellence in Finance, Kuwait*

**Advanced Statistical Methods to Forecast Systemic Liquidity (2022)**

*IMF Center of Excellence in Finance, Ljubljana*

**Advanced Statistical Methods to Forecast Systemic Liquidity (2022)**

*Caucasus, Central Asia, and Mongolia IMF Regional Capacity Development Center, Almaty*

**Density Forecasting and Modeling (2021)**

*IMF Institute of Capacity and Development, Washington D.C.*

**Advanced Statistical Methods to Forecast Systemic Liquidity (2021)**

*IMF Technical Assistance Center in Central America, Guatemala*

**Liquidity Forecasting for Central Banks Operating Fixed Exchange Rate Arrangements (2021)**

*IMF Middle East Center for Economics and Finance, Kuwait*

**Foreign Exchange Interventions Strategies for Central Banks (2021)**

*IMF Joint Vienna Institute (Caucasus, Central Asia, Belarus, Moldova and Mongolia Practitioners), Vienna*

**Forecasting with Quantile Regressions (2020)**

*South East Asian Central Banks (SEACEN) Research and Training Centre, Kuala Lumpur*

**Density Forecasting and Modeling (2019)**

*IMF Institute of Capacity and Development, Washington D.C.*

**Python for Macroeconomists (2019)**

*IMF, European Department, Washington D.C.*

**Linear and Non-Linear Econometrics, Statistics, Macroeconomics (2010-2012)**

*ENSAE and Sciences Po, Paris*

## Country Missions

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**Mauritania** Team of three people (2023)

Technical assistance to the central bank on liquidity forecasting and monetary operations

**Bosnia and Herzegovina** Mission chief, team of six people (2022)

Technical assistance to the central bank on foreign reserves and risk management, risk modeling

**Burundi** (2022)

Technical assistance to the central bank on liquidity forecasting, monetary framework, monetary operations

**Algeria** Mission chief, team of five people (2022)

Technical assistance to the central bank on liquidity forecasting

**United Arab Emirates** Co-mission chief, team of seven people (2021)

Technical assistance on the calibration of monetary operations, financial modeling and liquidity forecasting

**Namibia** Mission chief, team of four people (2021)

Technical assistance to the central bank on liquidity forecasting

**Jordan** Mission chief, team of four people (2021)

Technical assistance to the central bank on liquidity forecasting

**Djibouti** Mission chief, team of four people (2021)

Technical assistance to the central bank on liquidity forecasting

**Hong-Kong SAR** (2021)

Financial Sector Assessment Program: systemic liquidity modeling and stress-testing

**West African Economic and Monetary Union** (2021)

Financial Sector Assessment Program: scenario design, solvency stress-tests, etc.

**Tunisia** (2020)

Technical assistance to the central bank on liquidity forecasting

**South Korea** (2020)

Technical assistance to the central bank on foreign reserves management and portfolio management

**Morocco** (2020)

Technical assistance to the central bank on foreign exchange interventions and FX modeling

**Democratic Republic of Congo** (2020)

IMF program negotiations: monetary economist for the Rapid Credit Facility (RCF) program

**People's Republic of China, mission chief** (2019)

Technical assistance to the PBoC on financial modeling and risk analysis

**India, Philippines, Malaysia, Singapore** (2019)

Teaching density modeling to staff of central banks and the Asian Development Bank

**Israel** (2019)

IMF Article IV, dealing with the balance of payments and teaching density modeling to the Bank of Israel

**Albania** (2018-2019)

IMF Post-Program Monitoring and Article IV, dealing with the monetary, financial and real sectors

**Peru** (2018)

Financial Sector Assessment Program: systemic liquidity modeling, stress-testing and financial modeling

**People's Republic of China** (2015)

ECB negotiations with the People's Bank of China to build the RMB portfolio of the Eurosystem

## Academic Research

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### **Technology and the Geography of the Foreign Exchange Market** (2023)

[Journal of International Money and Finance, 131-2023](#), with B. Eichengreen (Uni. Berkeley), A. Mehl (ECB) and M. Minesso (ECB)

### **A Comprehensive Framework for Central Banks Liquidity Forecasting** (2023)

with A. Panagiotelis (Univ. Sydney) and K. Moriya (IMF) - *soon*

### **Macrofinancial Feedback, Bank Stress Testing and Capital Surcharges** (2023)

with T. Adrian (IMF) and J. Berrospide (US Federal Reserve Board) - *soon*

### **Foreign Exchange Interventions Rules for Central Banks: A Risk-Based Framework** (2020)

[IMF Working Paper No. 21/32](#), with R. Veyrune (IMF)

### **Predictive Density for Global Growth** (2020)

[IMF Working Paper No. 20/78](#), with F. Caselli, F. Grigoli and C. Wang (all IMF)

### **Growth at Risk: Concept and Application in IMF Country Surveillance** (2019)

[IMF Working Paper No. 19/36](#)

### **Can Countries Manage Their Financial Conditions Amid Globalization?** (2018)

[IMF Working Paper No. 18/15](#), with N. Arregui, S. Elekdag, G. Gelos and D. Seneviratne (all IMF)

### **Trading Without a View: Fast Trading, Entropy and Underreaction in the FX Market** (2018)

[ECB Working Paper No. 2300](#) with G. Corsetti (Cambridge) and A. Mehl (ECB)

### **Thick vs. Thin-Skinned: Technology, News, and Financial Market Reaction** (2016)

[IMF working paper No. 17/91](#), with B. Eichengreen (Uni. Berkeley) and A. Mehl (ECB)

### **Understanding Household Savings in China : The Role of the Housing Market and Borrowing Constraints** (2014)

[MPRA Paper No. 44611](#) with M. Bussiere, Y. Kalantzis (Banque de France) and T. Sicular (Uni. Western Ontario)

## Policy Publications

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### **United Arab Emirates: TA Report - Liquidity Management and Forecasting** (2022)

[UAE: IMF TA Report](#), July 2022

### **Jordan: TA Report - Forecasting Framework for Currency in Circulation** (2022)

[Jordan: IMF TA Report](#), April 2022

### **House Price Synchronization: What Role for Financial Factors?** (2018)

[IMF Global Financial Stability Report](#), April 2018

### **Financial Conditions and Growth at Risk** (2017)

[IMF Global Financial Stability Report](#), October 2017

### **Are Countries Losing Control of Domestic Financial Conditions?** (2017)

[IMF Global Financial Stability Report](#), April 2017

### **High-Frequency Trading, Information and Market Volatility: the Role of High-Frequency Quoting and Dark Pools** (2016)

[ECB Macprudential Bulletin](#), October 2016

### **The Role of Currency Invoicing for the Transmission of Exchange Rate Movements** (2015)

[ECB, The International Role of the Euro Report](#), July 2015 (with J. Grab)

## Open-Source Statistical Applications under Python

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Full description: <https://romainlafarguette.github.io/software/>

**Distributional GaRCH model to design VaR-based FX Interventions for Central Banks**  
<https://github.com/romainlafarguette/varfxi> Package available on [pypi](#)

**Density Forecasting Using Growth At Risk: Python Codes and Excel Interface**  
<https://github.com/IMFGAR/GaR>. With technical appendix and documentation

**Conditional Density Projection via Quantile Regressions, Resampling and Multifit Models**  
<https://github.com/romainlafarguette/gar>

**Robust Density Estimation via Over-Parametrized Gaussian Skewed Models**  
<https://github.com/romainlafarguette/robustdensity>

**Partial Least Squares Wrapper for Data Reduction based on Scikit**  
<https://github.com/romainlafarguette/plswrapper>

**Quantile Spacing - from Schmidt and Zhu (2016)**  
<https://github.com/romainlafarguette/quantilespacing>

**Quantile Local Projections**  
<https://github.com/romainlafarguette/quantileproj>

**Granular Instrumental Variables - from Gabaix and Koijen (2020)**  
<https://github.com/romainlafarguette/granulariv>

**Cluster Analysis Wrapper with Performance Metrics and Visualization Tools**  
<https://github.com/romainlafarguette/clusterwrapper>

## Skills

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**Languages:** Chinese Mandarin (fluent), English (fluent), French (native)

**Programming:** Python (including package deployment, testing, environment management, remote deployment on AWS, etc.), R, Matlab, SQL, Git (including CI/CD), AWS Cloud Computing, Linux, LaTeX, Emacs

**Financial Platforms and Databases:** Bloomberg, Macrobond, Haver, JPMaQS, CEIC, Wind, Refinitive, GFD, OE