

## Summary

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Quantitative researcher in finance, fluent in Chinese Mandarin, English and French. Specialized in machine learning and statistical models applied to financial and monetary issues.

Combination of technical skills in modeling, programming, and finance with a 10-year international policy experience with the International Monetary Fund and the European Central Bank. Missions to 25 countries. Mission chief, leading teams of 3 to 7 people on technical assistance missions.

Design open-source statistical models and algorithms, available on [romainlafarguette.github.io/](https://romainlafarguette.github.io/)

## Professional Experience

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**Abu Dhabi Investment Authority** Quantitative Researcher Since 2022

Sovereign Wealth Fund of Abu Dhabi, Quant Team ("Q")

Machine learning, big data, statistical inference, macro quant modeling

**International Monetary Fund** Economist & Technical Assistance Mission Chief 2016-2022

Monetary and Capital Markets Department

Mission chief, leading teams of 3 to 7 people on technical assistance missions

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

**European Central Bank** Economist & Portfolio Manager 2013-2016

Foreign reserves portfolio manager, Eurosystem Asian currencies portfolio

Negotiations with the People's Bank of China

Mathematical portfolio optimization, risk modeling, exchange rate forecasting

## Education

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**Ph.D. in Financial Economics**, Peking University and Paris School of Economics  
*Thesis on the FX market. Six years in China, 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.Eng. in Statistics and Applied Mathematics**, ENSAE Paris  
*Master thesis on density modeling, numerical simulations, resampling and bootstrapping*

**Undergrad - CPGE**, Henri IV Paris

## Country Missions

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**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

**Hong Kong SAR** (2019)

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

**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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### **A Comprehensive Framework for Central Banks Liquidity Forecasting** (2022)

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

### **Macrofinancial Feedback, Bank Stress Testing and Capital Surcharges** (2021)

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)

### **Cables, Sharks and Servers: Technology and the Geography of the Foreign Exchange Market** (2016)

[NBER Working Paper No. 21884](#), 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)

## Teaching

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**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, 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.*

**Introduction to Python for IMF economists (2019)**

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

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

*ENSAE and Sciences Po, Paris*

## 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>

**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>

## Languages

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

**Computer:** Python, R, Matlab