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References

Prof. Solomos Solomou (Supervisor)
Professor of Economics and Economic History
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Dr. Nelson Sobrinho
Senior Economist
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Professor of Econometrics
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Education

- **University of Cambridge** — Cambridge, UK
  Ph.D. in Economics *(Full Scholarship Funded by CSC)* — *2017-Jun/2022-Sep*
  ○ Supervisor: Prof. Solmous Solomou; Advisor: Prof. Alexey Onatski

- **University of Durham** — Durham, UK
  MSc in Economics *(Distinction)* — *2014-2016*

- **Zhejiang University** — Hangzhou, China
  BSc in Management *(1st /28)* — *2009-2013*
  ○ Honors: National Scholarship; First-Class Scholarship for Outstanding Students; First-class Scholarship for Outstanding Merits; First-Class Scholarship for Excellence in Research and Innovation; First Prize of the 8th Business Competition of Zhejiang; Province Outstanding Student Leader Award; Excellent Social Practice Scholarship

Research Interests

- **Primary fields: Macroeconomics, Development Economics, Macro-Finance, Economic Cycles**

- **Secondary field: In Historical Perspective, Banking and Finance**

Teaching Experience

Teaching Fellow, Faculty of Economics, University of Cambridge

- **Diploma Paper 2 - Macroeconomics**
  The compulsory course for Advanced Diploma in Economics (graduate level) — *2020-2021*

- **Part IIB Paper 6 - Banking & Finance**
  The optional course for final-year undergraduates in economics — *2020-2021*

- ### "Financial Accelerator and Endogenous Growth Over Medium-term Cycles" (PhD chapter)
  Xiaohua Chen and Ge Zhou
    - Abstract: The stylised facts of medium-term fluctuations in economy have been largely over- looked by the previous business cycle analysis and thereby are noting in this research. The medium-term cycles are defined as the sum of the high and medium-frequency (over 8 years) variations. This paper examines whether these medium-term fluctuations reflect some persistent and amplification mechanism of economic activity reacting at high-frequency variations and directing to long-run growth. The wavelet analysis with post-war US data indicates that the medium-term cyclical components are important descriptive features for real output, credit to firms, investment, consumption, TFP, and firm's funded R&D expenditure. These fluctuations are substantially more volatile and more persistent than the conventional measures. After reviewing the evidence, this paper develops a quantitative macroeconomic model to provide an integrated explanation of medium-term fluctuations in both real and financial sectors. The model endogenises the movements in productivity and growth rates with devices of intermediate product variety, and introduces the agent of banks that investing R&D activities. Intuitively, the high-frequency disturbances would affect the profit and valuations of technology innovations held the banks, thus their net worth, which in turn affects R&D activities that determine the product variety. Thus, the high-frequency disturbances ultimately produce sustained effects on productivity over a medium term. The model illustrates that both financial accelerator and endogenous growth as well as interactions between these two mechanisms can prolong and amplify the effect of high-frequency shock within a dynamic stochastic general equilibrium (DSGE) framework, which then leads to the medium-term oscillations.

- ### "Assessing Low-Income Countries' Capacity to Repay the IMF" (IMF Working Paper)
  Xiaohua Chen and Nelson Sobrinho
    - Abstract: Preserving low-income countries (LICs)' ability to service their debt obligations including to the IMF is key for their continued access to concessional financing and development. This paper develops a data-based tool to assess LICs' capacity to repay the IMF, drawing from a wide array of indicators of debt-carrying capacity. We employ well-known statistical tools (PCA, FA and UCM) to aggregate information from these indicators into a 'capacity-to-repay composite indicator', which we interpret as a relative measure of risks to a LIC's capacity to repay. These composite indicators for each arrangement are further categorised into three groups- high, moderate and low risks of repayment capacity, with K-means method. The tool performed well in validation exercises and could be used to help support capacity to repay assessments in real time.

- ### "National and International Medium-term Economic Fluctuations Since 1870" (PhD chapter)
  Xiaohua Chen
    - Abstract: This paper investigates the existence of medium-term cycles in real GDP/real GDP per capita for 30 developed and developing economies since c. 1870, and the synchronisation of these medium-term cycles across countries. Wavelets analysis indicates that the medium-term fluctuations are an important descriptive feature of the national economic growth.Studying the entire period between 1870 and 2016, we find that more country pairs are significantly positive synchronised over the medium-term cycles, compared to the business cycles. The global and group-specific factors for national medium-term cycles are further evaluated using principal component analysis (PCA) and dynamic factor models (DFM), in which countries are classified according to the outcome of a cluster analysis. The results of PCA and DFM suggest that group-specific factors play a much greater role for the domestic medium-term cycle, compared to the global factor. Particularly, a common medium-term cycle is found within each of four groups in the sample. Across three sub-periods (1870-1913, 1914-1959 and 1960-2016), we find an upward trend of global synchronisations of medium-term cycles over time. For each period, the national medium-term economic fluctuations tend to synchronise within groups rather than globally. The grouping patterns of these medium-term cycles, however, change notably over time; and for each sub-period, a common medium-term cycle can be found within some groups.

- ### "Banking Crises and Economic Recoveries" (PhD chapter)
  Xiaohua Chen, Bruno Rocha and Solomos Solomou
    - Abstract: This paper examines the medium-term effects of systemic banking crises using a data set for a panel of 165 countries for the period 1970-2021. We show that although banking crises have effects that induce medium-term adjustments, these effects are not permanent. The paper focuses on a set of response variables as a way of observing the channels by which a banking crisis affects the macroeconomy. We estimate response functions for GDP, GDP per capita, the investment ratio, the employment ratio, labour productivity and TFP growth. The results suggest that the average effect of systemic banking crises is confined to the first decade following the shock. Over time the negative effect abates and becomes statistically insignificant. Similar results are observed for twin

crises. The estimated effects of banking crises are average effects; in any particular country or period such impacts may differ substantially from the mean. The paper also explores the observed heterogeneity in terms of two measures of financial depth as measured by the credit-to-GDP ratio and a more general index of financial market depth capturing stock market capitalization to GDP, international debt securities of government to GDP, total debt securities of financial corporations to GDP and total debt securities of nonfinancial corporations to GDP. We show that systemic banking crises have differentiated effects depending on these measures of financial depth - as the financial depth of an economy develops, the damaging effects of systemic banking crises increase in magnitude and have a longer persistence profile.

WORK EXPERIENCE

- **PhD Intern, International Monetary Fund (IMF),** Finance Department, Washington, D.C.   *2020-2021*

- **Analyst, J.P. Morgan,** Centralized Research Group, Shanghai, China   *2016-2017*

- **Market Analyst, Euromonitor International,** Shanghai, China   *2015-2016*

OTHER RESEARCH

- **"State Ownership and Firm Performance: Evidence from Ten Industries of China"**
  Master Dissertation   *2015*
  - Abstract: This research estimated the relationship between state ownership and firm performance in different types of industries, using panel data of China's enterprises that are listed on the Shanghai and Shenzhen stock markets in ten industries from 1999 to 2014. These ten industries covered security, strategic, and competitive sectors. The empirical results concluded that state ownership could have a negative, positive, or insignificant relationship with firm performance in different industries, and competiveness of the market, which is largely affected by government intervention, plays an important role in this varying relationship. Case studies highlighting institutional reforms were used to expatiate further on the regression results.

- **"Synergetic Innovation Between Technology and Market: a Case study of Dahua"**
  with Gang Zheng, Science and Technology Progress and Policy   *2015*
  - Abstract: Conducting a case study of a listed Dahua Technology Co., Ltd, a high-tech private firm in China, this research found that the synergy of technology and market tends to be dynamic and multi-level, and thus we propose a strategy-function-individual pyramid model and three-stage process.

- **" The Capacities of Tech-based SMEs and their Performances"**
  with Chengchao Wang, Ziqi Liu and Junfei Huang, Foreign Investment in China   *2011*
  - Abstract: Conducting the empirical research of 256 questionnaires in major science parks of Hangzhou of China, we developed a competence-and-performance evaluation model of tech-based small and medium-size enterprises (SMEs), and proposed an innovative knowledge assistance service framework for entrepreneurs.)

SKILLS

- **Languages**: Chinese (native), English (fluent)

- **Software**: Matlab, R, Stata, Eviews, LaTeX, MS Office

- **Others**: CFA Level I (Passed 12/2018)