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Personal

Born on October 2, 1984

Indonesian citizen

Research Interests

Macroeconomics, development economics, monetary economics

Education

PhD Candidate in Economics, Research School of Economics, The Australian National University, 2021 – 2024 (expected)

MEcon. (Master of Economics), Research School of Economics, The Australian National University, 2016

BSc. in Mathematics, Mathematics Department, Bandung Institute of Technology (ITB), Indonesia, 2006

Employment

Economist on Central Bank of Indonesia, April 2010 – Present

Teaching assistant, The Australian National University, February 2016 – July 2016, July 2022 – Present

Doctoral Student Associate in Centre for Applied Macroeconomic Analysis (CAMA), The Australian National University, Australia, February 2016 – December 2019

Analyst on Automotive Finance Industry, August 2006 – March 2010

Researcher on Center for Research on the Applications and Advancement of Mathematics, 2006

Teaching assistant, Bandung Institute of Technology, August 2004 – July 2006

Working Papers

Informality, Earnings Dynamics and Inequality: The Case of Indonesia

Abstract:

We study earnings dynamics and inequality in developing countries where labour markets are fragmented, and informality is a prominent feature. We use Indonesia Family Life Survey (IFLS) - a longitudinal survey from 1993 to 2014 - that contains key information on formal and informal employment and earnings. We find a widening earnings gap between the two sectors over the study period. Earnings growth in the informal sector has felt behind for all income groups. Labour earnings are less volatile in the formal sector, but significant downside risks exist. Moreover, transitions between the two sectors are rigid and asymmetric. Only a relatively small fraction of informal workers are able to switch to the formal sector, which subsequently contributes to persistence in earnings inequality. Finally, family insurance provided by adjustments in household members' labour market activities, assets and transfers from the family network can partially smooth earnings fluctuations.

The Effects of Income Taxation: Indonesia Case

Abstract:

This study evaluates the effects of Indonesia's income taxation on key macroeconomic variables and its impacts on consumption and leisure distribution using the Overlapping Generations (OLG) model. It was found that the reduction in marginal labour income tax by 20% will positively impact the output, aggregate consumption, capital stock, and labour supply, but the consumption distribution and leisure distribution are getting more unequal, hence the total welfare decrease. An increase in marginal labour income tax for the same amount makes equal consumption distribution and leisure distribution that compensate for lower output, aggregate consumption, capital stock and labour supply, so the welfare increase. Without consumption tax, the labour income tax is significantly higher, which causes significantly lower macroeconomic variables. In this scenario, better consumption and leisure distribution are not enough to compensate for lower key macroeconomic variables and lower the total welfare.

Distributional Effect of Public Education: Indonesia Case

Abstract:

This study evaluates the effect of the government's increased public education on the distribution in Indonesia. Increased public education spending will lower inequality if the parents directly contribute to forming their children's human capital through effective parental time. More effective parental time will dominate direct education, creating an equal distribution. Different scenarios when the parent does not contribute significantly to forming their children's education show different results. An increase in public education spending by the government will increase inequality. When parents do not have enough effective parental time to educate their children, the indirect social security effect dominates. This effect represents how increased public spending will lower the after-income tax and the social security budget. Lower government transfer creates higher inequality

Monetary and Macroprudential Policy Mix under Financial Frictions Mechanism with DSGE Model

Abstract:

This research develops a DSGE model for Indonesia's small open economy, complemented by financial frictions in the form of collateral constraints amongst households and a financial accelerator amongst entrepreneurs. Including the banking sector in the model enables analysis of the policies required to mitigate shocks originating in the banking sector or other shocks and their influence on financial intermediaries in the form of banks in the economy.

The model demonstrates that shocks in the banking sector, for instance, raising the CAR requirement, impact the real sector through the credit channel, which undermines GDP and lowers the inflation rate. The financial accelerator mechanism in the model evidence procyclicality in the financial system to economic conditions. An economic contraction elicits a response from the banking industry to reduce the amount of credit allocated, which is the root of the risk faced by the banks. In the face of rising ex-post idiosyncratic shocks, exceeding those ex-antes indicates that bank assessments of an entrepreneur's expected return on capital are more significant than the actual realization, forcing banks to bear the risk. Such conditions encourage banks to reduce credit disbursement to avoid eroding bank capital.

The simulations show that a policy mix of monetary and macroprudential policy not only achieves sustainable GDP and stable inflation but also helps to control consumption, thereby reducing demand for imported goods. Coupled with stable exports, a slowdown in imports will have a favourable effect on the current account.

Interbank Market with DSGE Model

Abstract:

In this study, we built the DSGE model for Indonesia's small open economy, equipped with an interbank market mechanism to describe financial frictions from the supply side of banks. Banks use a portfolio optimization mechanism between channelling credit or saving in risk-free assets. In contrast, financial friction on the demand side is modelled with collateral constraints and financial accelerators.

The simulation results show that the shock in the interbank market will affect banks' general condition, especially in bank capital, CAR, and loan-to-deposit ratio (LDR). The condition of the Bank's balance sheet will affect the real sector. This model can also capture procyclicality and financial accelerators due to financial frictions in the economy, where GDP will be higher during the expansion phase compared to conditions without financial frictions, and vice versa, where GDP will be lower during the contraction phase. Banks will respond to the contraction in the economy by reducing the level of lending due to the high risk faced by banks, which will also increase bank lending rates so that entrepreneurs find it increasingly difficult to receive loans. This condition makes the Bank increasingly put pressure on lending to prevent the erosion of the Bank's capital.

The simulation results show that a shock in the form of a policy mix of monetary and macroprudential policies will suppress credit growth more deeply compared to conditions without macroprudential policies. GDP and inflation decreased but did not change much compared to conditions using only the BI

rate policy. Using the policy mix, the decline in consumption is offset by a decrease in imports so that GDP tends to be stable. The policy mixes also resulted in stable inflation.

Balance of Payment Indonesia Model

Abstract:

This study has built the Balance of Payments Indonesia Model for Assessments with a simultaneous equation approach. The two-step Error Correction Model (ECM) econometric method is used to estimate all equations. The modelled components are also more detailed, especially for the current account block, so it is expected to make storytelling easier for model users.

The simulation results show that the model aligns with the existing economic theory. The forecast error of the model is also relatively small, especially for the components in the current account section. Simultaneous equations in the model make it possible to see changes in current and financial accounts' impact on other macroeconomic variables.

Although the model involves many equations, it has been developed by automating the process of data input, estimation and running the model so that the level of difficulty in maintaining the consistency of the relationships between variables in the model is low.

The Determinant of Core Inflation in Indonesia

Abstract:

This paper analyses the factors influencing core inflation in Indonesia using the OLS model and quarterly data (q-to-q). We argue that in the period after the 1997/1998 economic crisis, core inflation was influenced by past (backward-looking) core inflation, inflation expectations (consensus forecast), output gap, the exchange rate (change and level of volatility), and M1 growth. Compared to the whole sample (1992-2011), in the period after the economic crisis, the role of the output gap became significant, the exchange rate pass-through was reduced, and the role of exchange rate volatility became larger. Using the output gap MV filter, it was found that there was a threshold output gap after a crisis period.

Meanwhile, the role of the policy rate (BI rate) in reducing core inflation is relatively limited. Using the ARDL model and monthly data (YoY) from January 2002 to June 2011, we argue that the movement of administered price inflation and volatile food inflation affects the movement of core inflation in Indonesia. In general, the impact of increases in volatile foods is more significant than the impact of increases in administered prices on core inflation. Several administered price commodities significantly impact core inflation are gasoline, urban transportation, household fuel, and telephone tariffs. Meanwhile, several volatile food commodities that significantly impacted core inflation were rice, beef, milk, noodles, and cooking oil.

Chapters

Strategy for Economic Transformation. In the 2019 Economic Report on Indonesia. Bank Indonesia, March 2020.

Awards

Bank Indonesia scholarship 2015-2016, 2021-2024. Master and PhD program.

Bank Indonesia scholarship for the undergraduate program for academic achievement, 2006.

Honourable Mention on Mathematical Contest in Modeling (MCM) as Delegation from Indonesia, by the Consortium for Mathematics and Its Applications (COMAP), 2006.

Dean's List, by the Faculty of Mathematics and Natural Science ITB, 2006.

Skills

Programming language and software: Python, STATA, MATLAB, SPSS, EViews, SAS.

Research Methods: Time-series econometrics (i.e., ARMA, VAR, SVAR, ARDL), panel regression, simultaneous regression and system simulation, dynamic stochastic general equilibrium (DSGE).

Developments

Model-Based Monetary Policy Analysis and Forecasting. International Monetary Fund, 2019.

Growth Policy Design. International Monetary Fund, 2018.

The Use of DSGE Models for Policy Analysis Level 2. Banque de France, 2017.

Computational Economic Workshop. ARC Centre of Excellence in Population Ageing Research, 2016

Modelling Financial Frictions. Bank of England, 2014

Global Projection Model. International Monetary Fund, 2013

Model Building and Development Using DSGE Models. SEACEN and Bank of England, 2012

Languages

Indonesia (Native)

English (Professional)

References

Chung Tran (Primary Thesis supervisor)
Associate Professor at The Australian National University
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Timothy Kam (Associate Supervisor)
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Firman Kartaadipoetra (Associate Supervisor)
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