Thammasat University Research Unit in Deep Learning and Advanced Econometrics

หน่วยวิจัยด้านการวิเคราะห์ทางประดิษฐ์เชิงลึกและเศรษฐมิติขั้นสูงแห่งมหาวิทยาลัยธรรมศาสตร์

คณะเศรษฐศาสตร์ มหาวิทยาลัยธรรมศาสตร์

The Thammasat University Research Unit in Deep Learning and Advanced Econometrics at the Faculty of Economics, Thammasat University, focuses on advancing research at the intersection of economics, finance, business analytics, artificial intelligence, and econometrics. The unit integrates deep learning and machine learning techniques with advanced econometric methods to analyze complex, high-dimensional, and nonlinear data relevant to real-world economic and financial systems.

Our research focuses on AI-driven econometric modeling, time-series analysis, forecasting, risk assessment, and policy evaluation. These methods are applied across a wide range of domains, including financial markets, macroeconomic stability, climate change, health economics, and business decision-making. The unit also aims to develop future-ready researchers, promote international publications, and foster collaboration with policymakers, industry, and global research networks.

Keywords: Deep Learning, Advanced Econometrics, Economic & Financial Analytics, AI-Driven Policy Research

Expected Outcomes

1. Enhanced analytical efficiency: Improved accuracy in the analysis and forecasting of economic, financial, and business phenomena.
2. Future workforce development: Contributing to the development of knowledge and human capital for Thailand’s future workforce.
3. Driving innovation: Transferring knowledge on the application of deep artificial intelligence models and advanced econometric methods for economic, financial, and business analysis, as well as disseminating this knowledge and providing training to capable and skilled individuals.

Research Plan

The research unit aims to become a leader in the application of advanced techniques from deep learning and advanced econometrics to enhance research analysis of highly complex issues in economics, finance, and business. The focus is on applying these techniques to in-depth data analysis, big data, and unstructured data, in order to generate high-quality results that are practically applicable for both policy-making and business decision-making.

Main Research Theme

"AI-Driven Models for Complex Economic, Financial, and Business Analysis"

Under this research theme, the unit will focus on studying economic uncertainty, financial market volatility, the impacts of macroeconomic policies, as well as consumer and business behavior. The research will employ techniques such as Recurrent Neural Networks (RNNs), Transformer-based time series models, deep generative models, and advanced econometric models, among others.

Publications of Members of the Research Unit

2026

Barcellona, C., Caampued, M., Dewi, S., Turner-Gorospe, J., **Jithitikulchai, T.**, Phuong, N.K., Ha, N.T., Nugraha, R.R., Due, Ong The, Vidal, G. and **Wattanakulchai, P.** (2026) 'Advancing strategic health purchasing for primary healthcare in Southeast Asia: A review of policy and practice in Indonesia, the Philippines, Thailand, and Vietnam', *International Journal of Health Policy and Management*, *15*.

Boonlert, R. (2026) 'Subjective well-being inequality among Thai older adults: Evidence from the Health, Aging, and Retirement in Thailand (HART) survey', *Journal of Population and Social Studies*, 35, pp. 574–596.

Chaisrilak, C. and Chaiwat, T. (2026) 'When context shapes preferences: Norm erosion and context-dependent fairness concerns in public goods games', *Games*, 17(3), article 27.

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Jithitikulchai, T. and Chonabayashi, S. (2026) 'Climate resilience investments and agricultural household livelihoods: Lessons from a climate-vulnerable economy', In *Climate Change in the Tropics: Understanding and Addressing the Impacts of Climate Change to Tropical Regions (forthcoming)*. Springer Nature.

Jithitikulchai, T. and **Leelahanon, S.** (2026) 'Analysis of policy impact on Thailand's income distribution in the last decade', *Economic Modelling*, *162*, p.107682.

Taveeapiradeecharoen, P. and Aunsri, N. (2026) 'Inflation forecasting in Thailand: Bayesian shrinkage and factor models in a small open economy', *IEEE Access*, 14, pp. 50959–50976.

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Huang, Y.K., McCarl, B.A., Fei, C.J., Attavanich, W., **Jithitikulchai, T.** and Han, D.B. (2025) 'Dilemma of CO_2 mitigation: Effects of climate, CO_2, and technological progress on rice yields', *Climate Change Economics*, 16(2), pp. 1–19.

Leelahanon, S., Amornratananukroh, N. and **Jithitikulchai, T.** (2025) 'Technical efficiency estimation of rubber farming in Thailand', *Southeast Asian Journal of Economics*, 13(3), pp. 113–159.

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Pincak, R., **Kanjamapornkul, K.**, Pigazzini, A. and Jafari, S. (2025) 'Theoretical investigation of Higgs mechanism in mutational behavior field of monkeypox virus', *Indian Journal of Physics*, pp. 1–24.

2024

Allan, N.P., Yamamoto, B.Y., Kunihiro, B.P., Nunokawa, C.K.L., Rubas, N.C., Wells, R.K., Umeda, L., **Phankitnirundorn, K.**, Torres, A., Peres, R. et al. (2024) 'Ketogenic diet-induced shifts in the gut

microbiome associate with changes to inflammatory cytokines and brain-related miRNAs in children with autism spectrum disorder', *Nutrients*, 16, article 1401.

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ข้อมูลทั่วไป

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