**2023年世界经济统计学最佳论文TOP10候选论文摘要**

**（一）中文候选论文摘要**

**SC01 PPI-CPI分化‘悖论’及其传导机制——基于生产链PPI统计指标体系的新解释 倪红福、吴立元、张志达（2023），《管理世界》，第2期，第38-89页。**

生产结构日益复杂，现行PPI和CPI统计指标体系的两个缺陷——覆盖面和重复计算——日益严重。本文借鉴美国劳工统计局的FD-ID PPI体系构建方法，构建了基于上游度方法的生产链PPI统计指标体系，并利用中国投入产出表及相关数据进行了测算分析。研究发现：（1）生产链PPI统计指标体系一定程度上克服了覆盖面与重复计算问题，为PPI-CPI分化之谜提供统计核算角度的新解释。现行PPI与CPI呈现显著分化现象，而新构建的FD-PPI与CPI走势相当一致，PPI-CPI分化几乎消失。（2）生产链PPI统计指标体系能更好地反映价格指数的传导机制。总体上，各阶段的价格冲击对其下游需求阶段有显著成本传导，而对其上游阶段的影响较小，且对冲击的反应在最邻近下游阶段最强，在进一步下游阶段趋于变弱。但由于中国特有的上下游生产结构特点，阶段3的价格冲击对下游阶段4和对上游阶段2都有显著的传导影响。（3）2011年1月-2022年8月，现行PPI与CPI之间不存在明显的上下游正向传导关系，而本文构建的FD-PPI与CPI之间则存在明显的上游到下游正向传导关系，价格传导具有一定的成本推动特点。

**SC02 数据跨境流转的风险测度与分析——基于数据出境统计信息的实证研究 李金、徐姗、卓子寒、李建平（2023），《管理世界》，第7期，第180-199页。**

数据作为新的生产要素，在不断的跨境流动中贡献经济价值。然而，数据的无序跨境流动可能危害个人、社会和国家安全，需同步探索治理体系、防范化解风险挑战，实现安全与发展的统筹协调。本文基于制度失范理论和威慑理论分析数据跨境风险的影响机制，利用生物医疗行业脱敏处理的数据出境统计信息开展研究，通过数据跨境传输频数、风险值和间隔时间测度数据跨境传输行为的频次和风险。研究结果表明，机构所在省份的GDP、过往数据跨境传输量和采用互联网传输均正向影响数据跨境频数和风险，采用云存储正向影响数据跨境风险，相关法律的施行对数据跨境传输具有显著的威慑作用。本文定义一次数据跨境传输行为并设计风险测度方法，识别和分析影响数据跨境传输的因素及其作用，为我国数据跨境流动规制提供理论依据和管理启示。

**SC03 扩大中等收入群体的内在逻辑与路径选择——基于国际经验与中国实践的定量分析 李金昌、任志远、陈宜治（2023），《统计研究》，第7期，第3-16页。**

扩大中等收入群体是实现共同富裕的重要手段。本文在梳理中等收入群体定义与测度标准的基础上，探索利用宏观统计数据测度中等收入群体比重的统计方法并借以探寻中等收入群体规模变化的内在规律。基于世界银行发布的统计数据，本文测度127个国家（地区）的中等收入群体比重与分布特征，并着重对中等收入群体比重与基尼系数之间的关系展开探究，以此归纳中等收入群体的合理比重及共同富裕背景下扩大中等收入群体的内在逻辑。最后，本文利用我国2003—2021年数据对中等收入群体比重进行测度，并对其变动效应进行定量分析，据此研判我国扩大中等收入群体的实践路径，为我国新发展阶段以扩大中等收入群体为抓手推进共同富裕提供客观依据。

**SC04 数字贸易测度研究——从聚焦数字实际交付服务到数字贸易全覆盖 高晓雨、王梦梓、贾怀勤（2023），《统计研究》，第11期，第17-28页。**

数字贸易正在成为数字经济的重要组成部分和全球贸易的未来发展趋势。数字贸易区别于传统贸易最主要的特点在于是否通过数字化的方式实现交易，但目前各国按照服务类型而非交易方式统计服务贸易，为数字贸易测度带来挑战。本文基于联合国贸易和发展会议（UNCTAD）从“数字可交付贸易”到聚焦“数字实际交付贸易”的研究，对标经济合作与发展组织（OECD）《数字贸易测度手册》的数字贸易宽口径指标，确立宽口径的数字贸易核算框架，并采用贾怀勤（2018）提出的数字技术融合比计算方法，对中国2018-2020年数字贸易规模进行试测算。结果显示，2020年，中国数字贸易进出口规模为4.0万亿元人民币，其中，数字交付贸易规模1.32万亿元，数字订购服务贸易规模0.99万亿元，数字订购货物贸易按跨境电商计算，规模为1.69万亿。本文深化了数字贸易规模测算研究，为进一步完善中国数字贸易规模测算体系和提出促进数字贸易发展的战略措施提供参考依据。

**SC05 基于混频数据的日度经济不确定性测度及其应用 郑挺国、曹伟伟、王霞（2023），《统计研究》，第1期，第33-48页。**

经济不确定性主要反映经济系统的不可预测程度，可以通过经济指标的实际值和预期值之间的偏差进行测度。为及时测度中国的经济不确定性，本文提出一种同比形式的日度混频动态因子模型，将金融市场的日度数据和传统的宏观低频数据信息相结合，构建中国日度经济意外指数和经济不确定性指数，用于反映中国宏观经济运行的非预期成分和不确定性程度。进一步地，本文基于日度数据分别讨论经济意外指数对人民币汇率的影响，以及经济不确定性对中国股市波动率的影响，研究结果表明经济意外指数的正向变化使人民币对美元升值，经济不确定性的增加将加剧股市波动。

**SC06 全球数字价值链增加值的测算及变动因素分析 马丹、唐佳琦（2023），《统计研究》，第6期，第3-19页。**

本文通过建立反映数字贸易依托部门的国际投入产出表，将数字化分工、传统分工以及融合分工价值链纳入到统一的生产分解模型，直观地测算出全球数字价值链增加值。研究发现：全球数字价值链增加值呈现稳定上升趋势，占全球价值链的比重显著提高，全球数字价值链分工格局具有典型的聚集效应和阶梯分布特征，中、美、德等国家在全球数字价值链中获利能力较强，高技术制造业部门是全球数字分工中增加值最为集中的部门；最终需求变化是驱动全球数字价值链增加值演变的重要因素，但在产业影响层面差异较大；全球数字价值链在一定程度上缓冲了新冠疫情对全球分工体系的冲击，起到了全球分工体系调整“稳定器”的作用。本文的研究为研判全球数字价值链分配格局，分析数字经济下全球分工新格局趋势提供重要的参考。

**SC07 供需双循环测度与中国经济平稳增长 侯俊军、岳有福、叶家柏（2023），《统计研究》，第3期，第3-17页。**

本文基于新发展格局“经济循环”的内涵特征构建了一个理解双循环的分析框架，从企业间中间产品供给循环和对企业的最终产品需求循环视角测度了中国供给端和需求端双循环，并通过结构分解分析（Structural Decomposition Analysis，SDA）方法探究了双循环视角下中国经济的平稳增长。研究发现：中国经济发展呈现出以国内循环为主体的显著特征，国内循环占比超过74%。供给端双循环中，内资企业间循环和内外资企业间循环占比在上升，而国内外企业间循环占比在下降，但仍在中国经济发展中扮演重要角色；需求端双循环中，国外对国外企业的最终产品需求对经济发展的重要性仅次于中国对内资企业的最终产品需求。SDA结果表明，国内循环发挥了经济增长的稳定器作用，国内循环效应对经济增长的贡献度始终保持在76%以上，尤其是需求端中国对内资企业的最终产品需求和供给端内资企业间循环的贡献度表现突出。和内资企业一样，外资企业也在促进内外经济循环中发挥了重要作用，表现为内外资企业间循环不仅拉动了中国的经济增长，更是促进中国经济平稳增长的关键因素。本文的研究丰富了对于构建新发展格局的认识，也为解释中国经济的平稳增长提供了一个新的视角。

**SC08 生态系统核算的发展历程、国际标准及国家经验——以联合国官方文本的演进与实施为主线 王勇、秦书静、孙雅文（2023），《统计研究》，第7期，第148-160页。**

健康的生态系统是人类生存和经济发展的基础，生态系统核算能够反映人类福祉与生态环境之间的关系。联合国先后于2012年、2014年和2021年发布《环境经济核算体系中心框架》（SEEA2012）、《环境经济核算体系——实验性生态系统核算》（SEEA2014）和《环境经济核算体系——生态系统核算》（SEEA-EA2021），这几个官方文本为各国开展生态系统核算奠定了理论基础。本文以联合国生态系统核算官方文本的演进与实施为研究主线，梳理生态系统核算的发展历程，提炼生态系统核算最新国际标准的核心内容（核算对象、类型分类与核算工具），并对三版国际标准的演进进行对比，归纳国际上各国开展生态系统核算的实践经验。文章最后结合中国生态系统核算的现状和难点，提出中国开展生态系统核算的政策建议。

**SC09 偏向性技术进步视角下全要素生产率增长的跨国收敛性及影响因素研究 李小克、胡巧丽（2023），《统计研究》，第5期，第37-50页。**

偏向性技术进步代表技术进步的一般形态，然而，鲜有文献从偏向性技术进步视角分析全要素生产率（TFP）演变的特征及其来源。本文基于标准化要素增强型CES生产函数，使用跨国层面的数据系统考察了偏向性技术进步视角下TFP增长的收敛性及其影响因素。研究发现，第一，国家间技术进步表现出明显的要素偏向，不同类型国家间偏向性技术进步情境下，TFP增长大致以1999年为界，其平均离散程度呈现先缩小后扩大趋势。第二，不同类型国家皆表现出明显的绝对β收敛，发达国家在整个样本期间始终保持条件β收敛态势，资本偏向性技术进步国家的TFP增长经历了先发散后向自身稳态水平靠近的演变阶段，而劳动偏向性技术进步国家的TFP演变趋势与之相反，这与长期依赖资本投入驱动产生的负面效应日益凸显有关。与同比增长率法相比，本文使用几何平均增长率法计算的TFP增长率降低了生产率波动对收敛检验结果的影响，其条件β收敛检验模型结果更为可靠。第三，教育水平提升、产业结构转变、要素禀赋结构优化、经济自由度提升等都有利于促进偏向性技术进步视角下TFP增长，而政府规模过度扩张引起生产率损失，该结论在考虑内生性、因变量选择性偏差和删除样本离群值后亦成立。因此，推进经济社会结构性改革对于发展中国家缩小与发达国家之间的生产率差距具有重要意义。

**SC10 汇率变动与双边贸易统计数据差异：基于国际游资套汇跨境流动视角 李红、包群、李港（2023），《财贸经济》，第10期，第161-176页。**

国际游资跨境流动已经严重干扰一国金融市场的正常秩序与健康运行，然而其行为具有高度隐蔽性导致难以被准确识别与监管。基于贸易伙伴国双边统计数据存在巨大差异的典型化事实，本文利用2010-2017年中国与167个贸易伙伴的贸易镜像数据，以“811汇改”事件为政策冲击，考察人民币实际汇率变动对通过贸易渠道进行国际游资跨境转移的影响。研究结果表明，人民币汇率变动的确给资本跨境流动带来了套利机会，在资本不能跨国自由流动的条件下，国际游资会借助贸易渠道，通过错报贸易数据实现跨境转移，从而导致双边贸易统计数据存在大量差异。贸易伙伴国的异质性检验表明，贸易伙伴的收入水平和贸易规模会影响汇率对双边贸易数据差异的边际效应，而套汇虚假贸易与错报行为不因距离远近而有不同，与同质产品相比投机者更倾向通过差异化产品的错报来实现国际游动资本的跨境流动，相对于低价值产品，投机者更趋向于选择高价值商品进行进出口错报。本文为有效防范与监管国际游动资本跨境转移提供了有益的政策借鉴。

**SC11 中国历史上的国际收支估算：1550—1948 颜色、辛星（2023），《金融研究》，第3期，第188-206页。**

国际收支对研究经济体的内部结构和对外联系意义重大，是理解一个经济体宏观状态的重要指标体系。本文旨在运用统一的、标准化的国际收支项目系统，梳理中国历史上国际收支的基本情况。通过对历史数据的挖掘、甄别和估算，形成了从明嘉靖二十九年（1550年）至1948年共计398年时间跨度、完整的中国国际收支表，并对不同历史阶段中国的国际收支特征及形成原因进行了分析。本文所做的工作为进一步深入分析中国国际收支格局的影响因素，以及国际收支情况变化对社会经济的影响提供了研究基础。

**SC12 国际上CPI手册的更新及对中国CPI编制的启示 许宪春、靖骐亦（2023），《统计研究》，第2期，第16-28页。**

国际上更新后的消费者价格指数（CPI）编制手册——《消费者价格指数手册：概念与方法》已于2020年发布，新手册在2004版的基础上，结合近年来在指数编制领域的研究进展和实践经验，对CPI编制的理论和方法进行更新，并给出更具指导意义的指数编制建议。本文从整体上全面总结了2020版CPI手册更新，围绕消费分类体系、线上价格采集、价格缺失和质量调整、权重价格更新、扫描数据的应用、季节性产品的处理等方面对2020版CPI编制手册的主要更新展开论述，并结合目前中国指数编制工作的进展，进一步分析手册更新对中国CPI编制工作的启示。

**SC13 中美属权贸易差额估算 陈全润、贾怀勤（2023），《统计研究》，第1期，第4-17页。**

本文利用经济合作与发展组织（OECD）公布的区分内外资的国家间投入产出表与跨国公司活动数据，对三国属权贸易模型中涉及的中美之间9种途径18种属权贸易流量进行了全部估算。估算方法采用属权贸易核算法与矩阵平衡法相结合的方式。估算结果显示：中美属权贸易总量明显高于属地贸易总量，中美属权贸易差额明显低于属地贸易差额，传统的属地贸易差额严重高估了中美贸易平衡状况；美国通过在华附属机构部门以及第三国附属机构部门向中国本土所属部门销售和出口大量产品，是美国向中国出口的重要途径；忽略中美之间通过第三国发生的属权贸易将严重高估中美属权贸易差额。属权贸易核算结果对全面认识当前中美贸易平衡问题具有重要参考意义。

**SC14 我国全口径地区服务贸易统计方法研究 刘伟、许宪春、任雪、汤美微（2023），《统计研究》，第12期，第3-13页。**

在中国产业结构升级和构建“双循环”新发展格局过程中，服务贸易成为多方重要的工作抓手。伴随着自由贸易区和服务贸易的快速发展，地区服务贸易数据需求也日益提升。中国在全国层面的服务贸易统计已经达到国际标准，在省级层面和部分试点城市也开展了服务贸易试算工作，但在金融服务、运输服务、保险服务、旅行服务这4类服务贸易的测算上仍存在数据来源不足和统计方法不完善的问题。本文基于多地和多部门的深入调研，以及对苏州工业园区的试点测算，对中国地区服务贸易统计现状和问题进行全面分析，在数据来源、统计方法和统计制度上进行创新，给出具备可操作性、与国际接轨和可复制推广的一揽子解决方案。

**SC15 欧盟综合社会保障统计体系：演进历程、核算框架与应用价值 赵建国、尚培培、张宇涵（2023），《统计研究》，第10期，第138-150页。**

可靠、及时、具有国际可比性的社会保障统计体系既是准确反映我国社会保障发展水平的关键，也是我国社会保障统计面临的挑战。目前，国际劳工组织（ILO）、经济合作与发展组织（OECD）、欧洲联盟（EU）和世界银行（WorldBank）4大国际组织已开展社会保障统计工作，其中，EU构建的综合社会保障统计体系最具影响力，且具备完善的理论体系和良好的应用价值。本文对欧盟综合社会保障统计体系（ESSPROS）的演进历程进行梳理，从统计口径、体系架构、统计单位和核算规则4个方面介绍ESSPROS的核算框架，对上述4大国际组织的社会保障统计工作进行对比分析，总结ESSPROS与国民账户体系（SNA）的区别，并分析其应用价值。最后，提出完善我国社会保障统计体系的建议，以期为我国社会保障统计工作提供参考。

**（二）英文候选论文摘要**

**SE01 The missing profits of nations. Tørsløv, T., Wier, L., & Zucman, G. (2023). *Review of Economic Studies, 90*(3), 1499-1534.**

By exploiting new macroeconomic data known as foreign affiliates statistics, we show that affiliates of foreign multinational firms are an order of magnitude more profitable than local firms in a number of low-tax countries. Leveraging this differential profitability, we estimate that 36% of multinational profits are shifted to tax havens globally. US multinationals shift twice as much profit as other multinationals relative to the size of their foreign earnings. We analyse how the location of corporate profits would change if shifted profits were reallocated to their source countries. Domestic profits would increase by about 20% in high-tax European Union countries, 10% in the US, and 5% in developing countries, while they would fall by 55% in tax havens. We provide a new international database of GDP, trade balances, and factor shares corrected for profit shifting. In contrast to the picture painted by official statistics, our results suggest that the corporate capital share has increased not only in North America but also in high-tax European countries. Capital is making a comeback globally, but its rise is obscured by the tax avoidance strategies of multinational companies.

**SE02 Robots, trade, and luddism: A sufficient statistic approach to optimal technology regulation. Costinot, A., & Werning, I. (2023). *Review of Economic Studies, 90*(5), 2261-2291.**

Technological change, from the advent of robots to expanded trade opportunities, creates winners and losers. How should government policy respond? We provide a general theory of optimal technology regulation in a second-best world, with rich heterogeneity across households, linear taxes on the subset of firms affected by technological change, and a non-linear tax on labour income. Our first set of results consists of optimal tax formulas, with minimal structural assumptions, involving sufficient statistics that can be implemented using evidence on the distributional impact of new technologies, such as robots and trade. Our final results are comparative static exercises illustrating, among other things, that while distributional concerns create a rationale for non-zero taxes on robots and trade, the magnitude of these taxes may decrease as the process of automation and globalization deepens and inequality increases.

**SE03 One-stop source: A global database of inflation. Ha, J., Kose, M. A., & Ohnsorge, F. (2023). *Journal of International Money and Finance, 137*, Article 102896.**

This paper introduces a global database that contains inflation series: (i) for a wide range of inflation measures (headline, food, energy, and core consumer price inflation; producer price inflation; and gross domestic product deflator changes); (ii) at multiple frequencies (monthly, quarterly and annual) for an extended period (1970–2023); and (iii) for a large number (up to 209) of countries. As it doubles the number of observations over the next-largest publicly available sources, the database constitutes a comprehensive, single source for inflation series. It also illustrates the potential use of the database with three applications. First, it studies the evolution of inflation since 1970 and documents the broad-based disinflation around the world over the past half-century, with global consumer price inflation down from a peak of 16.9 percent in 1974 to 2.5 percent in 2020, before rising to 7.8 percent in 2022. Second, the paper analyzes the role of common factors in explaining movements in different measures of inflation. While, across all inflation measures, inflation synchronization has risen since the early 2000s, it has been much higher for inflation measures that involve a larger share of tradable goods. In addition, the paper examines the behavior of inflation during global recessions. Global inflation fell sharply (on average by 0.9 percentage points) in the year to the trough of global recessions and continued to decline even as recoveries got underway.

**SE04 Credit growth, the yield curve and financial crisis prediction: Evidence from a machine learning approach. Bluwstein, K., Buckmann, M., Joseph, A., Kapadia, S., & Şimşek, Ö. (2023). *Journal of International Economics, 145*, 103773.**

We develop early warning models for financial crisis prediction applying machine learning techniques on macrofinancial data for 17 countries over 1870–2016. Most nonlinear machine learning models outperform logistic regression in out-of-sample predictions and forecasting. We identify economic drivers of our machine learning models by applying a novel framework based on Shapley values, uncovering nonlinear relationships between the predictors and crisis risk. Throughout, the most important predictors are credit growth and the slope of the yield curve, both domestically and globally. A flat or inverted yield curve is of most concern when nominal interest rates are low and credit growth is high.

**SE05 When are google data useful to nowcast GDP? An approach via preselection and shrinkage. Ferrara, L., & Simoni, A. (2023). *Journal of Business & Economic Statistics, 41*(4), 1188-1202.**

Alternative datasets are widely used for macroeconomic nowcasting together with machine learning–based tools. The latter are often applied without a complete picture of their theoretical nowcasting properties. Against this background, this article proposes a theoretically grounded nowcasting methodology that allows researchers to incorporate alternative Google Search Data (GSD) among the predictors and that combines targeted preselection, Ridge regularization, and Generalized Cross Validation. Breaking with most existing literature, which focuses on asymptotic in-sample theoretical properties, we establish the theoretical out-of-sample properties of our methodology and support them by Monte Carlo simulations. We apply our methodology to GSD to nowcast GDP growth rate of several countries during various economic periods. Our empirical findings support the idea that GSD tend to increase nowcasting accuracy, even after controlling for official variables, but that the gain differs between periods of recessions and of macroeconomic stability.

**SE06 Economic forecasting with an agent-based model. Poledna, S., Miess, M. G., Hommes, C., & Rabitsch, K. (2023). *European Economic Review, 151*, Article 104306.**

We develop the first agent-based model (ABM) that can compete with benchmark VAR and DSGE models in out-of-sample forecasting of macro variables. Our ABM for a small open economy uses micro and macro data from national accounts, sector accounts, input–output tables, government statistics, and census and business demography data. The model incorporates all economic activities as classified by the European System of Accounts (ESA 2010) and includes all economic sectors populated with millions of heterogeneous agents. In addition to being a competitive model framework for forecasts of aggregate variables, the detailed structure of the ABM allows for a breakdown into sector-level forecasts. Using this detailed structure, we demonstrate the ABM by forecasting the medium-run macroeconomic effects of lockdown measures taken in Austria to combat the COVID-19 pandemic. Potential applications of the model include stress-testing and predicting the effects of monetary or fiscal macroeconomic policies.

**SE07 A world equilibrium model of the oil market. Bornstein, G., Krusell, P., & Rebelo, S. (2023). *Review of Economic Studies, 90*(1), 132-164.**

We use new, comprehensive micro data on oil fields to build and estimate a structural model of the oil industry embedded in a general equilibrium model of the world economy. In the model, firms that belong to Organization of the Petroleum Exporting Countries (OPEC) act as a cartel. The remaining firms are a competitive fringe. We use the model to study the macroeconomic impact of the advent of fracking. Fracking weakens the OPEC cartel, leading to a large long-run decline in oil prices. Fracking also reduces the volatility of oil prices in the long run because fracking firms can respond more quickly to changes in oil demand.

**SE08 Assessing the role of economic globalization on energy efficiency: Evidence from a global perspective. Liu, F., Sim, J., Sun, H., Edziah, B. K., Adom, P. K., & Song, S. (2023). *China Economic Review, 77*, Article 101897.**

There has been concern that economic globalization will increase energy consumption and reduce energy efficiency. A slew of studies investigating this assertion have used trade, foreign investment, or both as indicators of economic globalization, with mixed findings. A number of concerns challenge the empirical literature including measurement issues, infrequent temporal variations in the data, business cycle effects and heterogeneity bias, which affect the causal ability of economic globalization. This study used global data of 141 countries to assess the effects of economic globalization on energy efficiency. Our identification strategies involved using more refined measures of economic globalization and energy efficiency, addressing infrequent temporal variations as well as business cycle effects and concerns of heterogeneity bias. Largely, economic globalization positively drives energy efficiency, but this effect suffers from upward bias without controls. We note that infrequent temporal variations in the data and business cycle effects and heterogeneity bias drive the result. Concerning the latter, the result has shown that economic globalization improves energy efficiency only in upper-middle and lower-middle income countries and not in high and lower-income countries. Our results raise serious caution about the causal abilities of existing studies. And we discuss the policy implications.

**SE09 Measuring monetary policy in the euro area using SVARS with residual restrictions. Badinger, H., & Schiman, S. (2023). *American Economic Journal: Macroeconomics, 15*(2), 279-305.**

This study measures the effects of monetary policy in the euro area using a small number of sign and magnitude restrictions on the residuals of a structural vector autoregression. We derive the dates and directions of these shocks from high-frequency financial market data around official European Central Bank policy announcements. Based on an in-depth narrative analysis and a comparison of the results with those of a standard high-frequency approach, we argue that our approach is purged from central bank information effects. Despite our rather agnostic identification strategy, we find clear and conclusive effects of monetary policy shocks on a wide range of macroeconomic variables.

**SE10 Measuring the cost of living in Mexico and the United States. Argente, D., Hsieh, C., & Lee, M. (2023). American *Economic Journal: Macroeconomics, 15*(3), 43-63.**

We use a dataset with prices and spending on consumer packaged goods matched at the bar code level across the United States and Mexico to measure the price index in Mexico relative to the United States. Mexican prices relative to the United States are 23 percent lower compared to the International Comparisons Project’s (ICP) price index. We decompose the 23 percent gap into the biases from imputation, sampling, quality, and variety. Quality bias increases Mexican prices by 48 percent. Imputation, sampling, and variety bias lowers Mexican prices by 11 percent, 13 percent, and 33 percent, respectively.

**SE11 Global GDSGE models. Cao, D., Luo, W., & Nie, G. (2023). *Review of Economic Dynamics, 51*, 199-225.**

We introduce our GDSGE framework and a novel global solution method, called simultaneous transition and policy function iterations (STPFIs), for solving dynamic stochastic general equilibrium models. The framework encompasses many well-known incomplete markets models with highly nonlinear dynamics such as models of financial crises and models with rare disasters including the current COVID-19 pandemic. Using consistency equations, our method is most effective at solving models featuring endogenous state variables with implicit laws of motion such as wealth or consumption shares. Finally, we incorporate this method in an automated and publicly available toolbox that solves many important models in the aforementioned topics, and in many cases, more efficiently and/or accurately than their original algorithms.

**SE12 Measuring inequality using geospatial data. Galimberti, J. K., Pichler, S., & Pleninger, R. (2023). *The World Bank Economic Review, 37*(4), 549-569.**

The main challenge in studying inequality is limited data availability, which is particularly problematic in developing countries. This study constructs a measure of light-based geospatial income inequality (LGII) for 234 countries/territories from 1992 to 2013 using satellite data on night-lights and gridded population data. Key methodological innovations include the use of varying levels of data aggregation, and a calibration of the lights–prosperity relationship to match traditional inequality measures based on income data. The new LGII measure is significantly correlated with cross-country variation in income inequality. Within countries, the light-based inequality measure is also correlated with measures of energy efficiency and the quality of population data. Two applications of the data are provided in the fields of health economics and international finance. The results show that light- and income-based inequality measures lead to similar results, but the geospatial data offer a significant expansion of the number of observations.

**SE13 On track or not? Projecting the global Multidimensional Poverty Index. Alkire, S., Nogales, R., Quinn, N. N., & Suppa, N. (2023). *Journal of Development Economics, 165*, Article 103150.**

This paper proposes a framework for modelling projections of multidimensional poverty. We use recently published data of changes over time in multidimensional poverty for 75 countries which is based on time-consistent indicators. We consider and evaluate different approaches to model the trajectories of countries in poverty reduction. Our preferred model respects theoretical bounds, is supported by empirical evidence, and ensures consistency of our main measure with its subindices. In our empirical analysis we first use this approach to examine whether countries would halve their poverty between 2015 and 2030 if recent trends continued before assessing the reasonableness of this target. Subsequently, we discuss implications of our modelling framework for computing projections under sustained efforts, setting poverty reduction targets, and the evaluation of trajectory switches. These implications mainly follow from the bounded nature of our outcome variables and are, therefore, applicable to a wide array of development indicators.

**SE14 What can be learned from the historical trend of crude oil prices? An ensemble approach for crude oil price forecasting. Li, M., Cheng, Z., Lin, W., Wei, Y., & Wang, S. (2023). *Energy Economics, 123*, Article 106736.**

Crude oil price series are nonlinear and highly volatile, making it difficult to obtain satisfactory performance for traditional statistical-based forecasting methods. To improve forecasting accuracy, this study proposes a novel learning paradigm by integrating the trajectory similarity method with machine learning models based on the decomposition-ensemble framework. In the proposed learning paradigm, raw data of international crude oil prices are first decomposed using variational mode decomposition (VMD), after which, using sample entropy (SE), the resulting essential modal functions are divided into high and low frequencies. The process aims to reorganize the data by using the forecasting properties of different models. Finally, to obtain the final forecasting results, two models, i.e., the trajectory similarity method (TS) and long short term memory neural network (LSTM), are applied to predict and sum up the low and high-frequency subseries, respectively. As sample data for validation, this study selected the international crude oil price series of West Texas Intermediate (WTI) and Brent. Experimental results showed that the proposed VMD-SE-TS/LSTM learning paradigm significantly outperforms all other benchmark models, including the single models without decomposition and the hybrid models with decomposition. The proposed approach performs best in different evaluation metrics and statistical tests under different horizons, indicating that the proposed VMD-SE-TS/LSTM learning paradigm is effective and robust in crude oil price forecasting.

**SE15 Energy vulnerability in Mediterranean countries: A latent class analysis approach. Bardazzi, R., Charlier, D., Legendre, B., & Pazienza, M. G. (2023). *Energy Economics, 126*, Article 106883.**

The need to protect vulnerable consumers is a priority for the European Commission but defining who is energy vulnerable remains difficult. Thus, in this paper, we provide an overview of energy poverty in 2019 for five Mediterranean countries (Greece, Spain, Italy, France and Portugal) using the EU-SILC database. We overcome a methodological difficulty inherent in pan-European research by developing the same tool, LCA (Latent Class Analysis) for characterizing energy poverty in all countries. Then we provide decision support in terms of energy poverty policy, without arbitrarily defining a binary tipping point. Indeed, we identify three groups with different needs: energy sufficient households, energy-poor households and more importantly, we highlight a third group which we refer to as energy vulnerable, who can easily fall below the radar of policy makers because they are not initially defined as precarious.