BABES BOLYAI UNIVERSITY

FACULTY OF ECONOMICS AND BUSINESS ADMINISTRATION

CLUJ NAPOCA

SHADOW ECONOMY IN THE EUROPEAN UNION. NEW ESTIMATES OF THE SHADOW ECONOMY USING THE ELECTRICITY CONSUMPTION METHOD

(SUMMARY)

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Cluj Napoca

2024

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The Thesis titled “Shadow Economy in the European Union: New Estimates of the Shadow Economy Using the Electricity Consumption Method” offers a groundbreaking analysis of the shadow economy across European Union member states by introducing an innovative estimation method that extends beyond traditional electricity consumption metrics to include total final energy consumption. This adaptation provides a more comprehensive and accurate depiction of the shadow economy, reflecting its significant impact on national economies, tax revenues, and regulatory frameworks.

Introduction

The Thesis begins by contextualizing the shadow economy within the European Union, defining it as all economic activities that, while legal, are concealed from public authorities to evade taxes and avoid compliance with labor regulations. This segment of the economy, though often overlooked, plays a crucial role in the economic fabric of nations, affecting fiscal policies, labor markets, and social welfare systems. By evading detection, these activities distort economic data, complicate policy implementation, and result in substantial revenue losses for governments.

Objectives of the study

The primary objective of this research is to employ the Modified Electricity Consumption Method (MECM) to estimate the size of the shadow economy in various EU countries more accurately. Additionally, the study aims to identify the key determinants that influence the magnitude of the shadow economy and to examine the relationship between the shadow economy and tax evasion. This multifaceted approach allows for a detailed exploration of both the causes and effects of economic informality within the EU.

Chapter I: Theoretical and Methodological Aspects Regarding the Shadow Economy and Tax Evasion, provides a comprehensive exploration of the shadow economy, offering a clear understanding of its definitions, determinants, and the methodologies for its estimation. The shadow economy is conceptualized through a multi – faceted lens, categorizing definitions into three primary types based on their connotations -neutral, intentionally occult, and positively assessed. These definitions help frame the shadow economy as a complex phenomenon that ranges from unregistered but legal activities to outright illegal endeavors such as drug trafficking and tax evasion.

The chapter also delves into the concept of tax evasion, portraying it as an unlawful strategy to minimize or avoid tax liabilities. Definitions from various sources emphasize the intentional concealment of taxable activities and the broader implications for governance and fiscal policy.

A significant portion of the chapter is dedicated to discussing the determinants of the shadow economy, segmented into economic, political – institutional, and social categories. Each determinant is scrutinized through contemporary research, illustrating how factors like GDP per capita, employment rates, institutional integrity, cultural influences, and public governance quality contribute to the prevalence or mitigation of shadow economic activities.

Methodologically, the chapter reviews several approaches used to estimate the size of the shadow economy, including direct methods like surveys and tax audits, indirect methods such as statistical discrepancies and employment data, and model approaches like the Multiple Indicators Multiple Cuses (MIMIC) model. Each method is evaluated for effectiveness, challenges, and the context of its application.

This thorough examination not only highlights the complexity and nuances of the shadow economy but also sets the stage for policy implications, emphasizing the need for multifaceted strategies to address both the shadow economy and tax evasion effectively.

Chapter II: Legal Aspects Regarding Tax Evasion and the Relationship with the Shadow Economy delves into the intricate relationship between tax evasion and the shadow economy, highlighting the legal and economic challenges they pose within the European Union. The chapter opens with a thorough analysis of how tax evasion often overlaps with, but is not synonymous with, the shadow economy. It elaborates on the motivations driving entities to engage in these activities, emphasizing that such motivations are not strictly correlated with the income levels of the individuals or entities involved.

The chapter proceeds to clarify essential terms such as tax fraud, tax evasion, Base Erosion and Profit Shifting (BEPS), tax avoidance, and the tax gap, providing a clear foundation for understanding the legal frameworks discussed subsequently. These definitions set the stage for a detailed exploration of the EU's legislative actions aimed at combating these issues, including significant initiatives like Transparency Package, Corporate Tax Reform Package, Anti Tax Avoidance Directive (ATAD), and the Action Plan on VAT.

A focal point of the chapter is the detailed account of the legal framework established to prevent tax evasion and tax avoidance in the European Union, underscoring the necessity of enhanced collaboration and international cooperation to effectively address these challenges. This section also chronicles the legislative measures implemented from 2014 onwards, reflecting the EU's proactive stance against tax – related malpractices.

Moreover, the chapter provides a comprehensive overview of the legal aspects specific to Romania, detailing the historical evolution and current statutes concerning tax evasion. This includes a discussion on the severity of penalties and the legal delineation of tax evasion activities, illustrating the country's rigorous approach to curbing fiscal evasion.

Consequently, Chapter II offers a profound insight into the legal battles against tax evasion and the shadow economy, highlighting the dynamic interplay between economic motivations, criminal activities, and legislative responses within European Union. This analysis not only sheds light on the complexities of tax-related offences but also outlines the varied approaches taken by different EU member states to mitigate these challenges.

Chapter III: Estimating the Shadow Economy with the Electricity Consumption Method provides a comprehensive analysis of methods used to estimate the shadow economy, with a particular focus on the electricity consumption method. The chapter opens by acknowledging the significance of accurately gauging the shadow economy, a topic of considerable interest among economists, policymakers, and social scientists due to its profound implications on economic policies and planning. It reviews traditional methods, categorizing into direct, indirect, and model approaches, and highlights the prevalent use of the MIMIC method by Schneider and his collaborators. However, the MIMIC method faces criticism for its dependency on the proper selection of variables, which can significantly influence the validity of its results.

To address these criticisms and enhance accuracy, the chapter introduces an innovative methodology that incorporates total final energy consumption instead of solely focusing on electricity consumption. This method aims to provide a more comprehensive assessment by accounting for various energy sources that better reflect the diversity of economic activities within the shadow economy. The chapter details the methodology used, including variable selection and data sources from official EU and World Bank databases covering the period from 2001 to 2021.

Empirical results are presented through a robust fixed effects panel regression model, emphasizing the significant variations in the shadow economy across the EU. The chapter discusses these findings and validates them through rigorous robustness checks, including tests for unit roots, cross-sectional dependence, and serial correlation, ensuring the reliability of the model.

The chapter concludes by estimating the shadow economy's size across 26 EU countries, revealing insightful trends and the impact of economic cycles on the shadow economy. This analysis not only advances the understanding of the shadow economy's dynamics but also underscores the methodological enhancements that yield more accurate estimations, thereby supporting more informed economic policy decisions. This chapter contributes significantly to the literature by refining the estimation methods of the shadow economy and offering a new perspective through the use of comprehensive energy consumption data.

Chapter IV: Determinants of Shadow Economy. A panel data study delves into the determinants of the shadow economy, focusing on the impact of government integrity, tax burden, foreign direct investment, well-being, and economic development on the informal sector's size. The chapter begins by highlighting the significance of understanding the shadow economy doe to its implications for tax revenue and public service provision. It extensively reviews literature that suggests businesses and individuals may enter the informal sector to avoid high taxes and regulations, and that higher economic development generally correlates with a smaller shadow economy.

Empirical analysis is conducted using panel regression with data from 27 EU countries over the period 2003-2021. The study tests hypotheses regarding the relationship between the shadow economy and its potential determinants: a negative relationship with GDP per capita, government integrity, and well- being, and a complex relationship with FDI and tax burden. The results confirm that higher GDP per capita, better government integrity, and improved well-being are associated with a smaller shadow economy. Conversely, higher tax burdens tend to increase the shadow economy's size, supporting the notion that onerous taxation drives economic activities underground. The relationship between FDI and the shadow economy is found to be context – dependent, with implications that vary based on local economic conditions and regulatory frameworks.

This chapter contributes to the policy discourse by elucidating how various economic and social factors influence the shadow economy. It underscores the importance of comprehensive policy approaches that consider these determinants to effectively reduce the shadow economy's prevalence and integrate it into the formal economic system.

Methodological Framework

Traditionally, the shadow economy has been estimated using Electricity Consumption Method (ECM), which correlates the electricity consumption with overall economic activity. However, this method often overlooks variations in energy use that do not directly correlate with economic production, such as renewable energy sources or changes in energy efficiency. The Modified Electricity Consumption Method (MECM) introduced in this thesis broadens the analytical framework to include total final energy consumption, thus capturing a wider spectrum of economic activities and providing a more nuanced estimation of the shadow economy's size.

Empirical Findings

Analysis using MECM reveals significant variations in the shadow economy's size across the EU. Eastern and Southern European countries exhibit larger shadow economies compared to their Northern and Western counterparts. This discrepancy is largely attributed to differences in economic development, institutional quality, and the effectiveness of tax enforcement and regulatory frameworks. The findings underscore the complexity of the shadow economy, which is influenced by a myriad of economic, social, and political factors.

Policy Implications

The insights gained from this study are vital for policymakers. Understanding the size and drivers of the shadow economy can aid in crafting more targeted and effective economic policies. The thesis suggests that an integrated approach, addressing both the shadow economy and tax evasion, is crucial. Policies that enhance economic transparency, improve tax compliance, and promote a fair competitive environment are essential for reducing the shadow economy's prevalence.

Conclusions

This research contributes significantly to the academic and policy discourse on economic informality by providing a more accurate tool for estimating the shadow economy within the EU.

The findings not only enhance our understanding of the shadow economy's impact on official economic indicators but also facilitate the development of more informed economic policies. The thesis underscores the need for continued refinement of estimation methodologies and for policies that address both the symptoms and root causes of economic informality.

Future Directions

The study highlights the need for ongoing research to further refine the MECM and to explore the dynamic interactions between the shadow economy and broader economic indicators. As economic landscapes evolve and new forms of informal activities emerge, it is crucial that policymakers adapt their strategies to effectively address these challenges. Future research should continue to explore the implications of the shadow economy for economic policy and governance, ensuring efforts to combat economic informality are both effective and sustainable.

REFERENCES

Achim, M. V., & Borlea, S. N. (2020). Economic and Financial Crime: Corruption, shadow economy, and money laundering (Vol. 20). Springer Nature.

Achim, M. V., Borlea, S. N., Găban, L. V., & Cuceu, I. C. (2018). Rethinking the shadow economy in terms of happiness. Evidence for the European Union Member States. Technological and economic development of economy, 24(1), 199-228.

Achim, M. V., Borlea, S. N., & Văidean, V. L. (2021). Culture, entrepreneurship and economic development. An empirical approach. Entrepreneurship Research Journal, 11(1), 20180091.

Achim, M. V., Postea, M. M., & Noja, G. G. (2024). New estimate of shadow economy based on the total energy consumption. Evidence from the European Union countries. Energy Economics, 130, 107335.

Ahumada, H., Alvaredo, F., & Canavese, A. (2009). The monetary method to measure the size of the shadow economy. *Revue Économique,* 60, pp. 1069–1078

Alarcón-García, G., Azorín, J. D. B., & De La Vega, M. D. M. S. (2020). Shadow economy and national culture: A spatial approach. Hacienda Pública Española, 232(1), 53-74.

Alm, J., Martinez-Vazquez, J., & Schneider, F. (2004). 'Sizing'the Problem of the Hard-to-Tax. Contributions to Economic Analysis, 268, pp. 11-75.

Alm, J., & Embaye, A. (2013). Using dynamic panel methods to estimate shadow economies around the world, 1984–2006. Public Finance Review, 41(5), pp. 510-543.

Alm, J., & Torgler, B. (2006). Culture differences and tax morale in the United States and in Europe. Journal of Economic Psychology, 27(2), 224-246. doi:10.1016/j.joep.2005.09.002.

Alm, J., Martinez-Vazque, J., & Torgler, B. (2006). Russian attitudes toward paying taxes–before, during, and after the transition. International Journal of Social Economics, 33(12), 832-857.

Arsić, M., Arandarenko, M., Radulović, B., Ranđelović, S., & Janković, I. (2015). Causes of the shadow economy. Formalizing the Shadow Economy in Serbia: Policy Measures and Growth Effects, 21-46.

Barthe, M.A. (1985), Choˆmage, travail au noir et entraide familial, Consommation, Vol. 3 No. 1, pp. 23-42

Baklouti, N., & Boujelbene, Y. (2020). Shadow economy, corruption, and economic growth: An empirical analysis. The Review of Black Political Economy, 47(3), 276-294.

Bergheim, S. (2007). The Happy Variety of Capitalism. Deutsche Bank Research.

Boeschoten, W.C. and M.M.G. Fase (1984), The Volume of Payments and the Informal Economy in the Netherlands 1965–1982. M. Nijhoff, Dordrecht.

Bordignon, M., & Zanardi, A. (1997). Tax evasion in Italy. Giornale degli economisti e annali di economia, 169-210.

Borlea, S. N., Achim, M. V., & Miron, M. G. A. (2017). Corruption, shadow economy and economic growth: An empirical survey across the European Union countries. Studia Universitatis „Vasile Goldis" Arad–Economics Series, 27(2), 19-32.

Bovi, M., & Dell'Anno, R. (2010). The changing nature of the OECD shadow economy. Journal of Evolutionary economics, 20, 19-48.

Bramati, M. C., Croux, C. (2007). Robust estimators for the fixed effects panel data model. The Econometrics Journal, 10(3), 521–540. http://www.jstor.org/stable/23126789.

Buehn, A. & Schneider, F. (2007). Shadow economies and corruption all over the world: Revised estimates for 120 countries. Economics, 1(9), pp. 1–66.

Cagan, P. (1958). The demand for currency relative to the total money supply. Journal of Political Economy, 67, pp. 303-328.

Canh, N. P., & Thanh, S. D. (2020). Financial development and the shadow economy: A multi-dimensional analysis. Economic Analysis and Policy, 67, 37-54.

Canh, N. P., Schinckus, C., Thanh, S. D., & Chong, F. H. L. (2021). The determinants of the energy consumption: a shadow economy-based perspective. Energy, 225, 120210.

Chen, H. ; Schneider, F (2019). Size and Causes of Shadow Economy in China over 1978–2016: Based on the Currency Demand Method. Retrieved on, 2018.

Chong, A., & Gradstein, M. (2004). Inequality, institutions, and informality.

Clement, S., Mara, E. R., Achim, M. V., & Postea, M. (2023). Determinants of Shadow Economy. A Bibliometric Approach: Determinantes da Economia Sombra. Uma Abordagem Bibliométrica. Brazilian Journal of Business, 5(2), 828-846.

Cobham, A. (2005). Tax evasion, tax avoidance, and development finance. Queen Elizabeth House Working, University of Oxford.

Collischon, M., Eberl, A. (2020). Let's Talk About Fixed Effects: Let's Talk About All the Good Things and the Bad Things. Köln Z Soziol 72, 289–299. https://doi.org/10.1007/s11577-020-00699-8

Contini, B. (1981), Labor market segmentation and the development of the parallel economy: the Italian experience, Oxford Economic Papers, 33, pp. 401–412.

Cowell, F. A. (1992). Tax evasion and inequity. Journal of economic Psychology, 13(4), 521-543.

Dabla-Norris, E., Gradstein, M., & Inchauste, G. (2008). What causes firms to hide output? The determinants of informality. Journal of development economics, 85(1-2), 1-27.

Dell'Anno, R., & Schneider, F. (2009). A complex approach to estimate shadow economy: the structural equation modelling. In Coping with the Complexity of Economics (pp. 111-130). Springer, Milano.

Del Boca, D. (1981), Parallel economy and allocation of time, Micros (Quarterly Journal of Microeconomics), 4, pp. 13–1

Del Boca, D., & Forte, F. (1982). Recent empirical surveys and theoretical interpretations of the parallel economy in Italy. The underground economy in the United States and abroad, Lexington (Mass.), Lexington, pp. 160-178.

Eilat, Y., & Zinnes, C. (2002). The shadow economy in transition countries: Friend or foe? A policy perspective. World Development, 30(7), pp. 1233-1254.

Elbahnasawy, N. G., Ellis, M. A., & Adom, A. D. (2016). Political instability and the informal economy. World Development, 85, 31-42.

Enste, D. H. (2018). The shadow economy in industrial countries. IZA World of Labor.

European Foundation for the Improvement of Living and Working Conditions. (1995). The Informal Sector in the European Union. Dublin: Eurofound.

EUROSTAT (2014) Essentian SNA : Building the basics. Louxembourg: Publications Office of the European Union

Fedajev, A., & Arsić, M. (2017). Drivers of shadow economy in transition countries during the post-crisis period: The results of structural model. FIKUSZ'17 Proceedings, 19.

Feige, E. L. (1979). How big is the irregular economy? Challenge, 22(1), pp. 5–13.

Feige, E. L. (1989). The meaning and measurement of the underground economy. *Feige, EL (1989a)*, 13-56.

Feige, E. L. (1994). The underground economy and the currency enigma. *Public Finance= Finances publiques*, *49*(Supplement), 119-136.

Feige, E. L. (1996). Overseas holdings of US currency and the underground economy. Exploring the Underground Economy. Kalamazoo, Michigan, 5-62.

Fortin, B., Garneau, G., Lacroix, G., Lemieux, T. and Montmarquette, C. (1996), L'Economie Souterraine au Quebec: mythes et realites, Presses de l'Universite Laval, Laval.

Frey, B.S. and H. Weck (1983a), Bureaucracy and the shadow economy: a macro-approach, in: Hanusch, H. (ed.), Anatomy of Government Deficiencies, Springer, Berlin, pp. 89–109.

Frey, B.S. and H. Weck (1983b), Estimating the shadow economy: a "naïve" approach, Oxford Economic Papers, 35, pp. 23–44.

Frey, B. S., & Pommerehne, W. W. (1984). The hidden economy: state and prospects for Measurement 1. *Review of income and Wealth*, *30*(1), 1-23.

Franz, A. (1983). Wie groß ist die „schwarze" Wirtschaft?, Mitteilungsblatt der Österreichischen Statistischen Gesellschaft, 49, pp. 1–6.

Gerxhani, K. (2004). The informal sector in developed and less developed countries: A literature survey. Public choice, 120(3), 267-300.

Goel, R. & Saunoris, J. (2017). Unemployment and international shadow economy: gender differences. Applied Economics, 49 (58).

Greening, L. A., Greene, D. L., & Difiglio, C. (2000). Energy efficiency and consumption—the rebound effect—a survey. Energy policy, 28(6-7), 389-401.

GU, W, Zhao, X., Yan, X., Wang, C., & Li, Q. (2019) Energy technological progress, energy consumption, and CO2 emissions: empirical evidence from China. Journal of Cleaner Production, 2019, 236: 117666.

Gutmann, P.M. (1977), The subterranean economy, Financial Analysts Journal, 34/1, pp. 24–27.

Hashimzade, N., Myles, G. D., & Tran-Nam, B. (2013). Applications of behavioural economics to tax evasion. Journal of Economic Surveys, 27(5), 941-977.

Hassan, M., & Schneider, F. (2016). Size and development of the shadow economies of 157 countries worldwide: Updated and new measures from 1999 to 2013. Available at SSRN 2861026.

Huynh, C. M., & Nguyen, T. L. (2020). Shadow economy and income inequality: new empirical evidence from Asian developing countries. Journal of the Asia Pacific Economy, 25(1), 175-192.

Huynh, C. M., Nguyen, V. H. T., Nguyen, H. B., & Nguyen, P. C. (2020). One-way effect or multiple-way causality: foreign direct investment, institutional quality and shadow economy? International Economics and Economic Policy, 17, 219-239.

Helberger, C., & Knepel, H. (1988). How big is the shadow economy? A re-analysis of the unobserved-variable approach of B.S. Frey and H. Weck-Hannemann. European Economic Review, 32, pp. 965–976.

Howe, L. (1988), "Unemployment, doing the double and local labour markets in Belfast", in Cartin, C. and Wilson, T. (Eds), Ireland from below: Social Change and Local Communities in Modern Ireland, Gill and Macmillan, Dublin

Johnson, S., Kaufmann, D., & Shleifer, A., (1997). The unofficial economy in transition. Brook. Pap. Econ. Act. 2, pp. 159–239.

Johnson, S., Kaufmann, D. and P. Zoido-Lobatón (1998a), Regulatory discretion and the unofficial economy, The American Economic Review, 88/2, pp. 387–392.

Johnson, S., Kaufmann D. and P. Zoido-Lobatón (1998b), Corruption, Public Finances and the Unofficial Economy, World Bank Policy Research Working Paper Series No. 2169, The World Bank, Washington, D.C.

Kaliberda, A., & Kaufmann, D. (1996). Integrating the unofficial economy into the dynamics of post-socialist economies: A framework of analysis and evidence. The World Bank.015 p5

Kelmanson, M. B., Kirabaeva, K., Medina, L., Mircheva, M., & Weiss, J. (2019). Explaining the shadow economy in Europe: size, causes and policy options. International Monetary Fund.

Kim, Y. (2003). Income distribution and equilibrium multiplicity in a stigma-based model of tax evasion. Journal of Public Economics, 87(7-8), 1591-1616.

Kirchler, E. (2007). The economic psychology of tax behavior. Cambridge, UK: Cambridge University Press.

Krstić, G., & Sanfey, P. (2011). Earnings inequality and the informal economy. Economics of transition, 19(1), 179-199.

Kunst, R. M. (2010). Econometric methods for panel data. UK: University of Vienna.

Lackó, M. (1996). Hidden economy in East-European countries in international comparison. International Institute for Applied Systems Analysis (IIASA), Luxemburg.

La Porta, R., & Shleifer, A. (2008). The unofficial economy and economic development (No. w14520). National Bureau of Economic Research.

Lemieux, T., Fortin, B. and Frechette, P. (1994), The effect of taxes on labor supply in the underground economy. American Economic Review, Vol. 84 No. 1, pp. 231-54.

Leszczensky, L., Wolbring T. (2019). How to Deal With Reverse Causality Using Panel Data? Recommendations for Researchers Based on a Simulation Study. Sociological Methods & Research, online first.

Leonard, M. (1994), Informal Economic Activity in West Belfast, Ashgate, Aldershot.

Lippert, O., & Walker, M. (Eds.). (1997). The underground economy: Global evidence of its size and impact. The Fraser Institute.

Lizzeri, C. (1979). Mezzogiorno in Controluce. Enel, Naples.

Loayza, N., Servén, L., & Sugawara, N. (2009). Informality in latin america and the caribbean (Vol. 4888). Washington, DC: World Bank.

Lyulyov, O., Paliienko, M., Prasol, L., Vasylieva, T., Kubatko, O., & Kubatko, V. (2021). Determinants of shadow economy in transition countries: Economic and environmental aspects. International journal of global energy issues, 43(2-3), 166-182.

MacAfee, K. (1980). A glimpse of the hidden economy in the national accounts, Economic Trends, 136, pp. 81–87

Macias, J. B., & Cazzavillan, G. (2009). The dynamics of parallel economies. Measuring the informal sector in Mexico. Research in Economics, 63(3), 189-199.

Maciejovsky, B., Schwarzenberger, H., & Kirchler, E. (2012). Rationality versus emotions: The case of tax ethics and compliance. Journal of Business Ethics, 109, 339-350.

Mara, E. R. (2011). Causes and consequences of underground economy. Anale. Seria Ştiinţe Economice. Timişoara, 17(17), 1109-1116.

Mara, E. R. (2021). Drivers of the shadow economy in European Union welfare states: A panel data analysis. Economic Analysis and Policy, 72, 309-325.

Mazhar, U., & Méon, P. G. (2017). Taxing the unobservable: The impact of the shadow economy on inflation and taxation. World Development, 90, 89-103.

McCrohan, K., Smith, J.D. and Adams, T.K. (1991), Consumer purchases in informal markets: estimates for the 1980s, prospects for the 1990s", Journal of Retailing, Vol. 67 No. 1, pp. 22-50.

Medina, L. & Schneider, F., (2018). Shadow economies around the world: what did we learn over the last 20 years? International Monetary Fund working papers. African Department, Washington, DC doi: 10.5089/9781484338636.001.

Medina, L., & Schneider, F. (2019). Shedding light on the shadow economy: A global database and the interaction with the official one. CESifo Working Paper No. 7981

OECD. (2002). Measuring the Non-Observed Economy.

OECD (2008), Non-observed economy in National Accounts. Survey Country/Practices, United Nations

OECD (2017), Shining light on the shadow economy: Opportunities and threats.

O'Higgins, M. (1989), Assessing the underground economy in the United Kingdom, in: Feige, E.L. (ed.), The Underground Economies: Tax Evasion and Information Distortion, Cambridge University Press, Cambridge, UK, pp. 175–195.

O'Neill, D.M. (1983), Growth of the underground economy 1950–81: some evidence from the current population survey, Study for the Joint Economic Committee, U.S. Congress Joint Committee Print, U.S. Gov. Printing Office, Washington, DC, pp. 98–122.

Quintano, C., & Mazzocchi, P. (2013). The shadow economy beyond European public governance. Economic Systems, 37, 650–670.

Pahl, R.E. (1984). Divisions of Labour, Blackwell, Oxford.

Park, T. (1979). Reconciliation Between Personal Income and Taxable Income, Bureau of Economic Analysis, Washington, DC, pp. 1947–1977.

Petersen, H.G. (1982). Size of the public sector, economic growth and the informal economy: development trends in the Federal Republic of Germany, Review of Income and Wealth, 28, pp. 191–215

Pickhardt, M., & Prinz, A. (Eds.). (2012). *Tax evasion and the shadow economy*. Edward Elgar Publishing.

Poufinas, T., Galanos, G., & Agiropoulos, C. (2021). The impact of competitiveness on the shadow economy. International Advances in Economic Research, 27(1), 29-46.

Portes, A. (1996), The informal economy, in: Pozo, S. (ed.), Exploring the Underground Economy, W.E. Upjohn Institute for Employment Research, Kalamazoo, pp. 147–165

Postea, M. M., & Achim, M. V. (2023). Estimation methods for the shadow economy. A systematic literature review: Métodos de estimativa para a economia subterrânea. Uma revisão sistemática da literatura. Brazilian Journal of Business, 5(3), 1574-1594.

Psychoyios, D., Missiou, O., & Dergiades, T. (2021). Energy based estimation of the shadow economy: The role of governance quality. The Quarterly Review of Economics and Finance, 80, 797-808.

Raczkowski, K., & Schneider, F. (Eds.). (2013). The Economic Security of Business Transactions: Management in Business. Chartridge Books Oxford.

Remeikienė, R., Gasparėnienė, L., & Schneider, F. G. (2018). The definition of digital shadow economy. Technological and economic development of economy. Vilnius: Technika, 2018, vol. 24, iss. 2.

REMEUR, C. (2019). EU policies–Delivering for citizens: The fight against tax fraud.

Richardson, G. (2008). The relationship between culture and tax evasion across countries: Additional evidence and extensions. Journal of international accounting, auditing and taxation, 17(2), 67-78.

Roubard, F., & Seruzier, M. (1991). Economie non-enregistréepar la statistique et secteurinformel dans les pays endéveloppement. Stateco no, 68.

Ruge, M. (2010). Determinants and size of the shadow economy – A structural equation model. International Economic Journal, 24, 511–524

Schneider, F. (2019). Size of the shadow economies of 28 European Union countries from 2003 to 2018. In European Union (pp. 111-121). Palgrave Macmillan, Cham.

Schneider, F., & Asllani, A. (2022). Taxation of the Informal Economy in the EU. European Parllament, Subcommittee on tax matters (FISC).

Schneider, F., & Enste, D. H. (2000). Shadow economies: Size, causes, and consequences. Journal of economic literature, 38(1), pp. 77-114.

Schneider, F., & Klingmair, R. (2004). Main labor market development during the transition, in enhancing job opportunities: Eastern Europe and the Former Soviet Union, Banque Mondiale, pp. 61-105.

Schneider, F., Raczkowski K., Mróz, B., (2015),Shadow economy and tax evasion in the EU, Journal of Money Laundering Control, Vol. 18 Iss 1 pp. 34 – 51

Schneider, F., & Buehn, A. (2018). Shadow economy: Estimation methods, problems, results and open questions. Open Economics, 1(1), 1-29.

Schneider, F., Linsbauer, K., & Heinemann, F. (2015). Religion and the Shadow Economy. Kyklos, 68(1), 111–41.

Schneider, F. (2015). GDP, Well-being, Happiness and the Shadow Economy: Some Results for Japan. The Senshu social well-being review, (1).

Schneider, F. (2015). Formalizing the Shadow Economy in Serbia.

Shelak, B. J. (1997). The impact of the US underground economy A note relating to the impact on state finances. Journal of Government Information, 24(2), 113-117.

Slemrod, J. (2007). Cheating ourselves: The economics of tax evasion. Journal of Economic perspectives, 21(1), 25-48.

Smith, P. (1994). Assessing the size of the underground economy: the Canadian statistical perspectives, Canadian Economic Observer, 11, pp. 16–33.

Stack, S., & Kposowa, A. (2006). The effect of religiosity on tax fraud acceptability: A cross-national analysis. Journal for the scientific study of religion, 45(3), 325-351.

Tanzi, V. (1980). The underground economy in the United States: estimates and implications, Banca Nazionale del Lavoro, 135, pp. 427–453.

Tanzi, V. (1983). The underground economy in the United States: annual estimates, 1930–1980, IMF Staff Papers, 30, pp. 283–305

Thießen, U. (2010). The shadow economy in international comparison: Options for economic policy derived from an OECD panel analysis.

Torgler, B., & Schneider, F. (2007). What shapes attitudes toward paying taxes? Evidence from multicultural European countries. Social Science Quarterly, 88(2), 443-470.

Wang, J. (2012, November). Study on dynamical relationships between energy consumption, technical progress and economic growth in China. In 2012 International Symposium on Management of Technology (ISMOT) (pp. 478-481). IEEE.

Warde, A. (1990), Household work strategies and forms of labour: conceptual and empirical issues, Work, Employment & Society, Vol. 4 No. 4, pp. 495-515.

Williams, C.C. (2004), Cash-in-hand Work: The Underground Sector and the Hidden Economy of Favours, Palgrave-Macmillan, London.

Williams C., (2006), Evaluating the magnitude of the shadow economy: a direct survey approach, Journal of Economic Studies, Vol. 33 Iss 5 pp. 369 – 385

Williams, C. C., & Schneider, F. (2013). The shadow economy. London: Institute of Economic Affairs.

Williams, C.C. and Windebank, J. (2001). Acquiring goods and services in lower income populations: an evaluation of consumer behavior and preferences, International Journal of Retail & Distribution Management, Vol. 29 No. 1, pp. 16-24.

Winkelried, D. (2005). Income distribution and the size of the informal sector. Available at SSRN 777144.

Wooldridge, J. M. (2002). Econometric analysis of cross section and panel data MIT press. Cambridge, ma, 108(2), 245-254.

Wu, D. F., & Schneider, F. (2021). Nonlinearity between the Shadow Economy and Economic Development. The Global Informal Workforce, 85.

Yoo, T., & Hyun, J. K. (1998). International comparison of the black economy: Empirical evidence using micro-level data. Paper Presented at 1998 Congress of Int. Institute Public Finance

Yusuf, R. A., & Nguyen, L. T. Q. (2023). Shadow economy and FDI: the role of corruption and land resource. Journal of Economics and Development, 25(2), 171-182.

ŽUKAUSKAS, V. (2018). Shadow Economy: Understanding Drivers, Reducing Incentives. Vilnius: Lithuanian Free Market Institute [cit. 2019-11-28]. Dostupné z: https://www. llri. lt/wpcontent/uploads/2018/11/Shadow-Economy.-Understanding-Drivers-Reducing-Incentives. pdf.

www.europa.eu

www.gov.uk

www.heritage.org

www.oecd.org

www.taxation-customs.ec.europa.eu

www.worldbank.org

www.worlddatabaseofhappiness.eur.nl