The Quality of Official Statistical Systems and the Quality of Official Data on the Economy

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Abstract

This paper first describes the function of Official Statistical Systems and their mission to disseminate data on economic and other issues. Official data are used by politicians, the media, research institutes, and the public for making decisions and reports, and for research and data mining. Morgenstern criticized the Accuracy of Economic Observations decades ago. Meanwhile, the UN, OECD, World Bank, IMF, and the EU have elaborated standardized frameworks for managing Statistical Systems and for improving the Quality of Organizations, Processes, Statistical Output and the Accounting Systems. However, Güvenen, Koyuncugil, Altmiks et al. express their doubts on the quality of official data. Official reports did neither indicate nor predict the world economic crisis 2008 and after. The paper discusses distortion of information due to "false response", "excessive credit financing", missing data on the "informal economy" and on "hidden money", and the "relevance" of official data neglecting "liquidity". The conclusion is that users of official economic data should take more care on "accuracy" and "relevance". Research is needed to estimate the unknown bias of economic data. The needs of S+M companies, investors, the markets are to be covered more.

Keywords: Accuracy, False Response, Economy, Liquidity, Hidden money

International and National Statistics Systems

The Function of Official Statistical Systems and the Statistical Offices

Official Statistical Systems build up a part of the Information Systems and National Administrations. The OECD (2014) defines "The national statistical system (NSS) is the ensemble of statistical organizations and units within a country that jointly collect, process and disseminate official statistics on behalf of national government." Eurostat (2013) adds "Effective economic and political decision-making depends on the regular supply of reliable information. Statistics are one of the principal sources of such information." The

Statistics Systems are operated by National Statistical Offices, Line Ministries, Central Banks and other agencies. Data are collected from enterprises, farms, households etc. Modern IT enables to process and store gigantic data masses, to provide indices, tables and charts, and to disseminate the results via the Internet for governmental and public use. The data on industrial production, services, agriculture, transport, trade, population and public finance are also used for media reports, academic research and data mining.

International Standards on the Quality of Official Statistics Systems

Morgenstern (1963) criticized the poor accuracy of economic observations. Meanwhile, the UN (2013), World Bank (2013), UN ECE (2010), OECD, EU and Eurostat (2007) have elaborated a standardized legal, institutional and methodological framework for managing Official Statistics Systems more efficiently. They remind that the "need for a set of principles governing official statistics became apparent at the end of the 1980s when countries in Central Europe began to change from centrally planned economies to market-oriented democracies." Among these principles are "high quality international statistics, accessible for all", "the maintenance of the trust in international statistics", and "the right of the public to be informed about the mandates for the statistical work". The UN demands that "the concepts, definitions, classifications, sources, methods and procedures are chosen to meet professional scientific standards and are made transparent for the users", and "data collection must be cost-efficient" and "minimize the reporting burden for data providers". In 2014 these principles became affirmed by the UN General Assembly (2014).

Quality Standards of the European Statistical System

Quality Declaration and Quality Definition

The basic principles of the UN have been implemented in the European Statistical System (ESS). The commitment of Eurostat (2013) is to "provide the European Union and the world with high quality information on the economy and society". During the 90ies Eurostat(2001) and the National Statistical Offices, including Germany's Federal Statistical Office (2012), signed the ESS Quality Declaration covering "user orientation, continuous improvement, product quality commitment, accessibility of information, cooperation, respecting the needs of data suppliers, a culture of quality, quality management, effective and

efficient processes, and staff satisfaction". A Regulation of the EU on Community Statistics makes these standards obligatory. The "European Statistics Code of Practice" is edited by Eurostat (2011) as a more practical reference for definitions and standards and for assessments of the Quality of Organization, Statistical Processes and Statistical Output.

Quality of Organizations and Processes: TQM, IT and Capacity Building

The Quality of Statistical Organizations is a topic of The World Bank (2005) for "capacity building" in developing countries. For improving the Quality of Organizations and Processes Eurostat (2007. pp. 8,92) and the National Statistical Offices introduced the "European Foundation for Quality Management Excellence Model" and the "Total Quality Management" approach in the ESS . Both concepts are proposed for Quality Reports and for self-assessments in National Offices. However, it is hard to measure the benefits of TQM and EFQM at non market institutions, as these concepts were designed for businesses to increase turnover, profits, shareholder value or returns on investment. There are less doubts on the benefits of modern IT and the Internet for data processing and dissemination.

Quality of Statistical Output and Economic Data

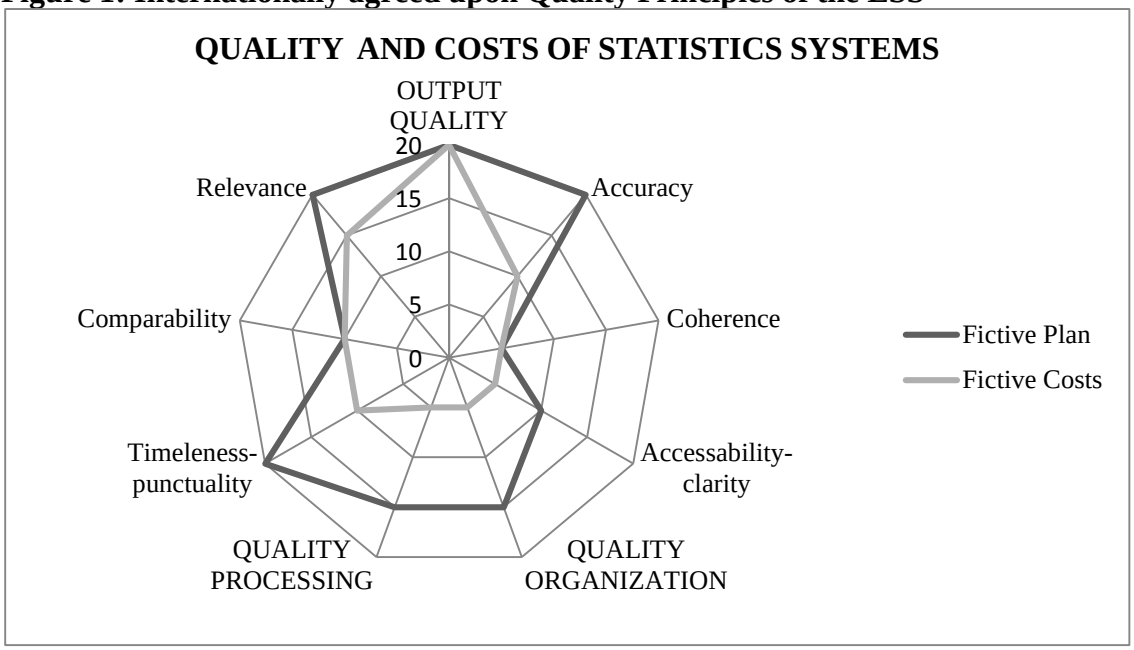
The UN ECE (2010. p. 4) and Eurostat (2011,2007. pp. 73-74) define the Quality of Statistical Output by the principles of "relevance, accuracy, timeliness and punctuality, accessibility and clarity, comparability and coherence, and completeness" (Figure 1). Quality Reports on these indicators are to be drafted and annexed to all data publications.

Comparability, coherence, accessibility, and timeliness,

The United Nations, the OECD and Eurostat (2002, 2007) focus many activities on "Comparability" and "Coherence". Comparability means, that "statistics for a given characteristic have the greatest usefulness when they enable reliable comparisons of values taken by the characteristic across space and time". Coherence means, that "statistics are coherent in so far as they are based on common definitions, classifications and methodological standards", like the System of National Accounts - SNA (EU

Commission (2009) IMF, OECD, The World Bank). The "accessibility" and "punctuality" of data might be well achieved by modern IT and the Internet.

Figure 1: Internationally agreed upon Quality Principles of the ESS



Source: The diagram refers to the principles of output quality of the ESS and uses fictive data

Relevance and Accuracy

A prior mission of Statistics Systems is to provide "relevant" and "accurate" economic data. Statistics Output has to comply with the principle of "relevance" to "meet the users' needs". "Accuracy" is defined as "the closeness between the estimated value and the (unknown) true value" (Eurostat 2011, 2002). Results remain poor, if only "the mean squared error" of sample survey data is defined as an indicator of "accuracy", normally preferred by statisticians. For achieving a high value of information on the economy the "accuracy" of data has to comply with the principle of "true information". This is compulsory in the Accountant System.

Accurate business data are a precondition of accurate statistics data

Morgenstern (1963/1973, p.70) comments, that "business accounts constitute the single most important source of information about the economic activity of a nation." The Quality of Accountant Data is a necessary precondition of accurate statistics data. The International Financial Reporting Standards (IFRS)

for "true" and "accurate" accounting and auditing procedures (Roberts, et.al. (2002) pp. 14, pp.149) should guarantee the "truth" of the data. The compulsory standards were set up by the "International Accounting Standards Board (IASB), International Federation of Accountants (IFAC), the OECD, World Bank, UNCTAD," and the EU-Commission (2005).

Distorted information and poor Quality of Economic Data

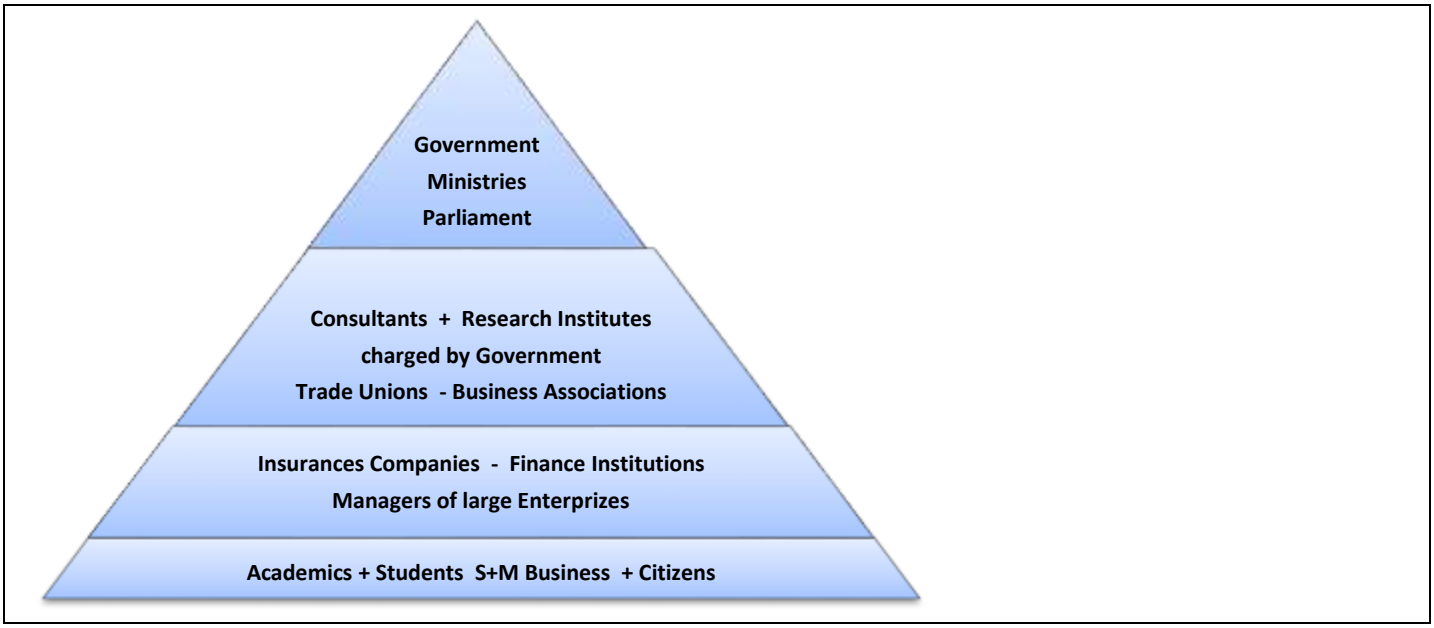
Distorted information from distorted Statistical Systems

Official Statistical Systems have been internationally harmonized and standardized world- wide. Thus, many operators and users of official data assume these standardized data comply with "accuracy" and "relevance". However, academics like Güvenen, Koyuncugil (2013), Altmiks (2010) express their doubts on the quality of the Official Information Systems. Official economic reports did neither indicate nor predict the "2008-2013 world economic crisis". Güvenen (2013) criticizes "The distortion of information in information systems may create high alternative costs … and negative impacts on quantitative and qualitative distortions in decision making structures."

Official data neglect the needs of S+M companies, private users and the markets

Doubts are being expressed on the "relevance" of official data. The main users are politicians and public administrators. Data bases are established for non market use to monitor and control the financial and economical results of public legislation. The needs of the markets, S+M economic units, academics and the citizens are neglected. UK Statistics has drafted a pyramid to discuss this crucial issue (Figure 2). Ranked on the top are user groups like the government, deputies and other politicians, public administrators, and the media, followed by trade unions, trade and industry associations, consultants and research institutes, insurance companies and banks. Ranked on the bottom are the needs of S+M companies, handicraft businesses, farmers, academics and the citizens (Figure 2).

Figure 2: Ranking of Main Data Users



Source: Slightly changed figure from the UK National Statistical Institute London 2013

Poor relevance of economic data due to unrecorded liquidity

Illiquidity caused the failures of many enterprises and banks and led to a global "systemic crisis" in 2008. The liquidity problems of the governments of Greece, Spain etc. caused a public debt crisis leading to a "Euro Crisis" in 2010-2014. Data on the liquidity at financial markets and the "real economy" are relevant, official data on liquidity are missing or poor. Koyuncugil (2013) proposes to set up an "Early Warning System". Statistics Systems make accessible data masses by the Internet, but most data have poor "relevance" for the markets and the general public. Missing or poor are geographically related investors' and market information systems, information systems on public purchases, money supply, restructuring and privatization and on state owned property. More information is needed on liquidity, national assets, wealth balances, infrastructure, reserves, energy, natural resources, and the functioning of markets. The American FactFinder-System of the US Census Bureau (2014) seems to be a step forward.

Unknown bias of officially collected and recorded economic data

The crash of Lehman Brothers and other large investment banks was reported by the media. When large enterprises like General Motors, Telekom, Volkswagen, Siemens, faced high losses and had to fear insolvency in 2008, official data indicated national growth. Later, when the public debt crisis of Greece and

Spain and their negative spillover effects on the EURO area hit the markets during 2010 and 2011, official data indicated the recovery of the economies in the EURO area. Obviously the official data have an unknown bias. Investigations are needed about the "truth" of the financial statements and the surveyed business data on production, turnover, and profits from the account systems of companies. "True" business data need a correct booking and stocktaking of the quantities and a pricing and evaluation in line with accounting regulations (Roberts, et.al. 2002). "Toxically infected derivatives of derivatives" force depreciation, but many managers hesitate to revalue real estate, shares and the worthless claims (TSI-congress, 2008). Knechel (2009) affirms "Many accounting and auditing scandals of the past decade have involved outright fraud by management, including recording fictitious inventory and hiding liabilities." (p. 5)

False audited business data build up a poor statistical data base

The poor accuracy of data from audited and approved statements on income and balances of banks has been criticized by the International Monetary Fund (2009). In its "Global Financial Stability Report 2009" (GFSR) the IMF estimated, that write downs of about US-$1.5 trillion are necessary at banks, which had already conducted write downs of US-$1.3 trillion (pp. 9-10). After a revaluation at German Banks the German National Bank identified losses instead of profits in 2008. The poor "accuracy" of "audited business data" of economic units has been investigated and revealed by Aydin (2013), Knechel (2009) et al. Depreciations on over evaluated assets are postponed or hidden by many managers, and auditors gave their official approval to the financial statements, balances and profit and loss accounts, shortly before the companies failed during 2008.

Distortion of economic data by credit financing and excessive money supply

The IMF (2014) again criticizes the banking system "The necessary transitions of the global financial system are far from complete, and stability conditions are far from normal." Güvenen (2013) focuses his critics also on the gigantic increase of money supply "We observe that the world GDP was $60 trillion (2008)" and "the amount of financial operations in investment banking and markets were over $ 600

trillion." Altmiks, Schäffler, Tofall et al. (2010) affirm "Western governments supported banks already by EURO5.0 trillion from October 2008 to September 2009". They argue "Money supply M3 in the EURO zone has increased from EURO 4.4 trillion to 9.5 trillion in 2009 due to the purchases of state loans from Greece etc. by the ECB". More distortions are to be expected if Gokhale's (2014) "implicit budget deficits and obligations" are made transparent by official data. Uncontrolled money supply allows an excessive credit financing at all markets. This leads to a gigantic increase of private and public debt and to the dysfunction of the Price System and the Accounts System and creates "Bubble Economies". The users of the Statistics Systems are favoring Greenspan (2008), who propagated "In a market economy rising debt goes hand in hand with progress" (p.146). Uncontrolled credit financing was feared by Friedman (1966) and criticized as Casino Capitalism by Strange (1986/1997).

Inaccuracy of economic data due to missing data on the Informal Economy

The accuracy of economic data is disturbed by missing data on the "informal economy" or "non-observed-economy". The OECD (1994), UN ECE (2008) and The World Bank explain "Informal activities are those activities which occur outside the normal administrative and regulatory framework", and "The Non-observed-economy refers to all productive activities that may not be captured in the basic data sources used for national accounts compilation."

Informal Economy in Developing Countries

The "informal economy" is a crucial issue in developing countries. Reports of the World Bank (2014) are indicating that developing countries are far behind OECD countries in "nation and governance building". In the agricultural sector informal activities, like subsistence farming, dominate economic activities in developing countries.

Informal Economy and "false response" in former GDR and Transformation Countries

Brezinski (1987) revealed that socialist systems like former GDR were hit by the "informal economy". He enumerated "violation of price and foreign exchange regulations, barter arrangements, black labor, theft of

state or socialist property, tax fraud and the hording of products". Illegal production was an unsolved problem in former Soviet-Union (p. 91).

The poor "accuracy" of data from former GDR was due to "false response", an issue detected by the Treuhandanstalt. The Federal Holding of eastern German enterprises requested stock takings and re-evaluations of all assets and liabilities during the 90ties. The revised financial statements made evident, that the former GDR-Statistical Office received and used false data from state-owned enterprises (Wernicke, 1999). False reports were abused to hide inventory shortages and losses and to put Eastern-Germany to the top 10 of industrialized economies. Failures also due to disinformation forced a transfer of 2.000 billion € to the eastern part of Germany, still lagging behind the western part (The Christian Science Monitor, 2014).

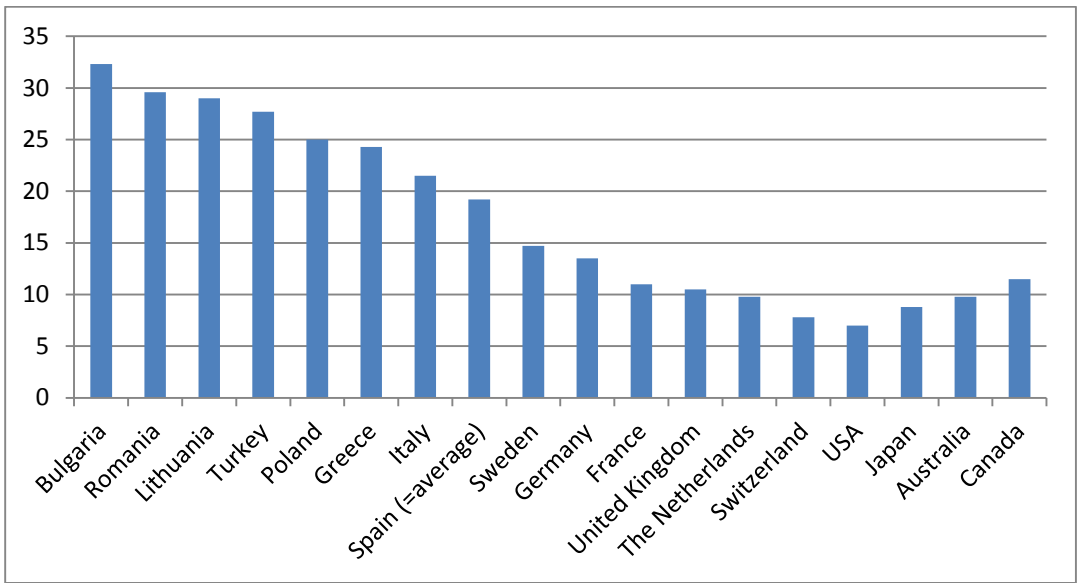
Informal Economy a neglected issue in OECD countries

Also OECD countries have to face the informal economy. Sinn (2004) estimates the volume of informal economy in Germany at EURO350bn per year. Unofficial estimates on informal activities of OECD countries are provided by Schneider (2013). Economically weaker EU members are more hit by informal activities than highly advanced OECD countries (Figure 3).

Distortion of economic data by "Off shore Hidden money"

Also the impact of "hidden money" is neither revealed nor recorded by Official Statistical Systems. The IMF (2000) defines "Off-Shore-Centers" as centers which provide the "following services: low or zero taxation; moderate or light financial regulation; banking secrecy and anonymity" (p.1). The transactions of "subsidiaries of subsidiaries of holdings" are not recorded in the balances of surveyed economic units and remain uncovered by statistics and taxation offices (Blum 2009, Wahl 2008). Former US-government adviser Blum (2009) estimated "hidden money" at several trillion US-$. Journalists of The Guardian (2013) published internet-lists with 100.000 enterprises and banks operating "Off-Shore-Companies". The estimates on"hidden money" differ between 21-32 trillion US-$.

Figure 3 Shadow Economy in selected OECD-countries Estimated percentage of GDP



Source: Diagram drafted with reference to estimates calculated by Schneider(2013)

Conclusion

As it was discussed, the framework for Official Statistical Systems got standardized and improved, at least in OECD countries. Users have access to official data via the Internet, but they cannot take for granted a high quality of economic data. Official data are distorted and have an unknown bias. Investigation and assessment of the data and reforms are necessary to get more "relevant" and "accurate and true" business data for an adequate picture of the economy. Data are to be provided which are also "relevant" for the markets, S+M business, academics and the general public, and without improving data accuracy "Economic decisions, by business and government alike, are made largely in the dark" (Morgenstern, 1963, p.305).

References

Altmiks P., Schäffler, F. & Tofall, N. (2010) *Währungswettbewerb als Evolutionsverfahren*. in Altmiks, P. (ed.) Im Schatten der Finanzkrise. München. Germany.

Aydin A. D. (2013) *Role of Accounting and Audit in the Recent Financial Crisis*, In: *Technology and Finacial Crisis*, Koyuncugil, A.S., Ozgulbas N. (ed.) publ. USA IGI 2013

Blum, Jack (2009) „*How escape from taxation and regulations by moving „offshore" ruined world's economy*", contribution for Heinrich-Boell-Foundation, June 9, Berlin, Germany.

Brezinski H. (1987) *The Second Economy in the GDR* in Studies in Comparative Communism ed. D.T.Cattell Vol XX nr. 1 Butterworths p. 91

European Union (EU)

Eurostat (2002) *Quality in the European Statistical System — The way forward*. Luxembourg, Retrieved in May, 2014 from http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/

Eurostat (2007) *Handbook on Data Quality Assessment Methods and Tools*. Ehling M. and Körner T. (eds.) Wiesbaden, Germany

Commission DG Internal Market and Services (2009) *Accounting Directives* Retrieved from http://www.ec.europa.eu/internal_market/accounting/index_en.htm

Eurostat (2011) *European Statistics Code of Practice 2011*. Retrieved 2014 from website http://www.epp.eurostat.ec.europa.eu/portal/page/portal/quality/code of practice

Parliament and Council (2013) *Directive 2013/34/EU* of 26 June 2013 on the annual financial statements, amending *Accounting Directives,* Official Journal of the EU L 182/19

Eurostat (2001) *Quality Declaration of the European Statistical System*. Retrieved in Sept. 2013 from website http://www.epp.eurostat.ec.europa.eu

Eurostat (2009) *ESS Handbook for Quality Reports*, Retrieved in May 2013 from website http://www.epp.eurostat.ec.europa.eu

Friedman, M. (1966) *Essays in Positive Economics*, 5th ed. Chicago US- London UK

German Federal Statistical Office (2012) Statistisches Bundesamt *Verhaltenskodex für Europäische Statistiken*. Wiesbaden

German Federal Statistical Office (2006) Statistisches Bundesamt. *Die Qualitätsstandards der amtlichen Statistik* Statistische Ämter des Bundes und der Länder ed. Wiesbaden.

Gokhale, J. (2014) The Government Debt Iceberg, publ. The Institute of Economic Affairs, London UK. retr. May 2014 from website http://www.iea.org.uk/publications/research/

Greenspan, A. (2008) *The Age of Turbulence*, New York USA

Güvenen, O. (2013) 2008-2011 *World Economic Crisis,* Koyuncugil A.S. and Ozgulbas N. (ed.) *Technology and Financial Crisis*, publ. USA IGI 2013

International Monetary Fund (IMF)

IMF (2000) Monetary and Exchange Affairs Department. *Offshore Financial Centers.* Retrieved 2014 from website http://www.imf.org/external/np/mae/oshore/2000/eng/back.htm

IMF (2009) *Global Financial Stability Report 2009*, Washington DC, USA.

IMF (2014) *Global Financial Stability Report* 2014, Retrieved in April 2014 from website http://www.imf.org/external/pubind.htm

Knechel, R. (2009) *Audit Lessons from the Economic Crisis*: Rethinking Audit Quality Inaugural Lecture Delivered in English Maastricht University

Morgenstern (1963) *On the Accuracy of Economic Observations*. Princeton University Press. Princeton USA

Organization for Economic Cooperation and Development (OECD)

OECD, IMF, ILO (2002) *Measuring the Non-Observed Economy*. Handbook 2002. Paris. France. Retrieved 2013 from website http://www.oecd.org/std/na/1963116.pdf

OECD(1994) Report Expert Meeting on Informal Activities in the Private Sector in Transition Economies. Paris. France P. 2. Retrieved from website http://www.oecd.org

OECD (2009). *Progress Report on the Jurisdictions* surveyed by OECD. Internationally agreed Tax Standard *1 . (2012 and 2nd April 2009) Retr. from website http://www.oecd.org

OECD (2014) *Glossary of Statistical Terms - National Statistics System* retrieved in April 2014 from website https://stats.oecd.org/glossary/ID=1726

Roberts C., Weetman, P., Gordon P. (2002) *International Financial Accounting* A comparative approach, 2nd ed. Financial Times Prentice Hall London-Harlow UK

Schneider F. (2013) *Size and Development of the Shadow Economy* of OECD Countries from 2003 to 2013: A Further Decline 2013

Sinn, H. W. (2004) *Ist Deutschland noch zu retten* ? 8th ed. Berlin Germany

Strange, S. (1986/1997) *Casino Capitalism*, Manchester University Press Manchester U

The Christian Science Monitor (2014), *25 years later, western Germany is still pumping money to the east,* retrieved on April 19 from http://www.csmonitor.com/

The Guardian, (2013, April 4) *Comment on Secrets Offshore Hideaways Laid Bare*, retrieved April 2014 from website http://www.theguardian.com/uk/2013/apr/04/secrets-offshore

The World Bank (2005) *Capacity Building in Africa*, Retrieved in May 2014 from website http://lnweb90.worldbank.org/

The World Bank (2013) *Data Quality and Effectiveness* Retrieved September 2013 from website http://data.worldbank.org/about/data-overview/data-quality-and-effectiveness

TSI-*True sale international congress* (2008) – Papers on the financial crisis 2008. October 1-2. Berlin. Germany.

United Nations (UN)

UN Economic Commission for Europe (2008) *Non-observed Economy in International Accounts*. New York-Geneva. Retrieved Sept. 2013 from http://unstats.un.org/unsd/

UN Statistics Division (2010). *Statistical Data Quality in the UNECE* - 2010 Version retrieved in Sept. 2013 from http://unstats.un.org/unsd/dnss/docs-nqaf/UNECE-Quality.pdf

UN Statistics Division (2013) *Principles Governing International Statistical Activities*, retr. in April 2014 from http://unstats.un.org/unsd/accsub-public/principles_stat_activities.htm

UN Statistics Division (2014) *Fundamental Principles of Official Statistics*. Retrieved in April 2014 from website http://unstats.un.org/unsd/dnss/gp/fundprinciples.aspx

U.S. Census Bureau (2014) *Statistical Quality Standards*, retrieved in April 2014 from //www.census.gov/quality/standards/

Wahl, P. (2008) *Does Money rule the World*, HB-Foundation, April, Berlin, Germany.

Wernicke, I. H. (2013) *Financial Crisis reveals Systemic Crisis of Official Statistics*, Koyuncugil A.S. and Ozgulbas N. (ed.) Technology and Financial Crisis, publ. IGI-Global Hershey PA USA

Wernicke, I.H. (1999) *Statistically unrecorded Causes of Unemployment and Poverty in Countries in Transition*, in: Elsner, E. Statistics and Planning / Berlin, Germany

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