Coccia, Mario

Article

World-system theory : a sociopolitical approach to explain eorld economic development in a capitalistic

Journal of economics and political economy

Provided in Cooperation with:
KSP Journals, Istanbul

This Version is available at:
http://hdl.handle.net/11159/2863

World-System Theory: A sociopolitical approach to explain World economic development in a capitalistic

By Mario COCCIA [†]

Abstract. This conceptual paper describes world-systems theory that is a socioeconomic and political approach that explains the economic development and dynamics of capitalistic world economy. In particular, this study clarifies international market trade, economic division of labor and other relationships between core and periphery areas. Some limitations of this approach conclude this study.

Keywords. World-systems analysis, World economy, World market, Capitalistic world economy, Core-oeriphery areas.

JEL. F63, O10, O20.

1. Introduction

Wallerstein (1974) suggests a world-systems theory that investigates the economic development of nations in order to create an alternative approach with theories of modernization (Rostow, 1960; Seymour Lipset, 1955; cf., Skocpol, 1977, p.1075). This theoretical paradigm by Wallerstein (1974) rejects the nation-state as the sole unit of analysis, that all countries can follow only a single path of development and that poor countries can rely on exports to develop. The theoretical background of the world-systems theory by Wallerstein (1972, 1974) is the *Annales School*, Marx studies and dependence theory. The Annales school is an historical approach and Wallerstein's theory accepts some concepts, such as geoeconomic regions as units of analysis and reliance on empirical and historical materials (Braudel, 1994, 1996). Wallerstein (1972, 1974) considers from Marx's studies the centrality of the capital accumulation (a commercial asset value that is used by capitalists to obtain additional value, i.e., surplus-value) and competitive class struggles. World-systems theory is also based on dependency theory that focuses on core-periphery geoeconomic relations (Chirot & Hall, 1982). The international-dependence models consider developing countries in a relationship of dependence with rich countries (Coccia, 2005, 2009, 2010, 2010a, 2010b, 2010c, 2011, 2014, 2014a, 2014b, 2014c, 2014d, 2015, 2015a, 2017, 2017a, 2018, 2018a, 2018b; Coccia & Benati, 2018; Coccia & Bellitto, 2018; Coccia & Cadario, 2014; Coccia & Rolfo, 2010; Coccia *et al.,* 2015). In particular, these international-dependence models show the power imbalances between rich and poor countries (cf., Lewellen, 1995; Todaro & Smith, 2003). Moreover, Wallerstein's approach is affected by Schumpeter (1911, 1942) with his theory of business cycle, the role of markets driven by innovations and other driving forces of liberal capitalist

[*†] Arizona State University, Interdisciplinary Science and Technology Building 1 (ISBT1) 550 E. Orange Street, Tempe- AZ 85287-4804 USA.
☎. + 85287-4804
✉. mario.coccia@cnr.it

development (cf., Chase-Dunn & Grimes, 1995). Figure 1 shows some differences between modernization and world-systems theory.
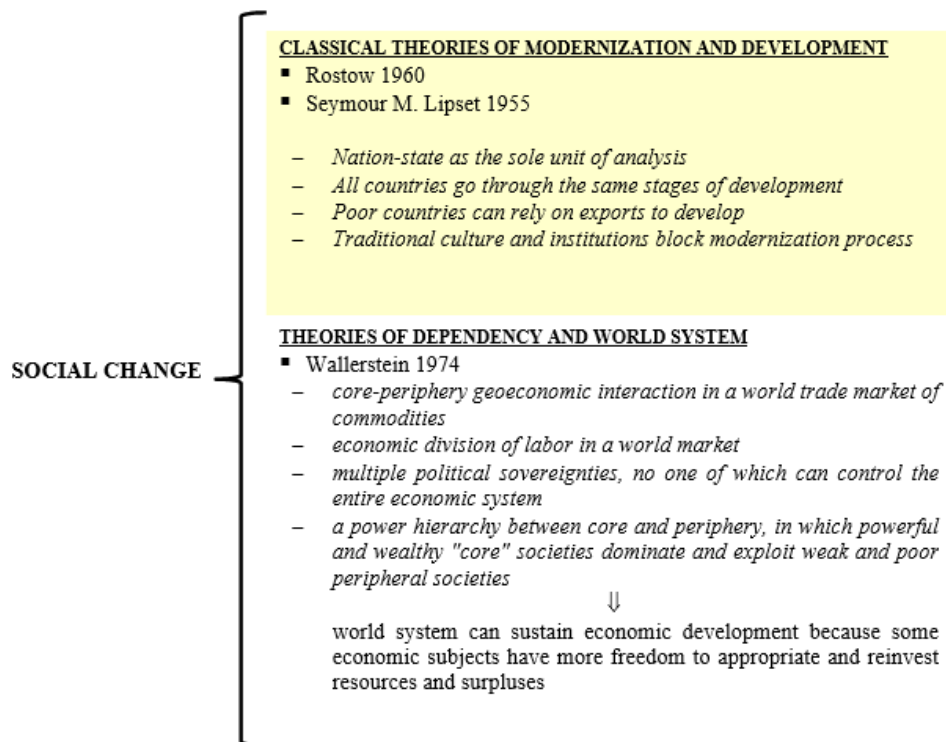

CLASSICAL THEORIES OF MODERNIZATION AND DEVELOPMENT
- Rostow 1960
- Seymour M. Lipset 1955

  – *Nation-state as the sole unit of analysis*
  – *All countries go through the same stages of development*
  – *Poor countries can rely on exports to develop*
  – *Traditional culture and institutions block modernization process*

SOCIAL CHANGE

THEORIES OF DEPENDENCY AND WORLD SYSTEM
- Wallerstein 1974
  – *core-periphery geoeconomic interaction in a world trade market of commodities*
  – *economic division of labor in a world market*
  – *multiple political sovereignties, no one of which can control the entire economic system*
  – *a power hierarchy between core and periphery, in which powerful and wealthy "core" societies dominate and exploit weak and poor peripheral societies*

  ⇓

  world system can sustain economic development because some economic subjects have more freedom to appropriate and reinvest resources and surpluses

Figure 1. *Modernization theory vs. World-systems theory of development*

2. World-systems theory: An approach to explain capitalistic systems

Wallerstein (1974, p.374) states that: "a world-system is a social system, one that has boundaries, structures, member groups, rules of legitimation, and coherence. Its life is made up of the conflicting forces which hold it together by tension and tear it apart as each group seeks eternally to remold it to its advantage. It has the characteristics of an organism, in that is has a lifespan over which its characteristics change in some respects and remain stable in others…Life within it is largely self-contained, and the dynamics of its development are largely internal". In the world-systems theory by Wallerstein (1974) a vital concept is "world economy" integrated through the market, rather than a political center, in which two or more regions have geoeconomic interaction with respect to necessities like food, natural resources, and protection (Goldfrank, 2000).

Wallerstein (1974) endeavors to explain the capitalist world economy. In particular, Wallerstein (1974, p. 347) considers a theory of social change based on a: "social system… largely self-contained entity whose developmental dynamics are largely internal". Wallerstein (1974) also argues that world markets are based on an economic division of labor, in particular, a: "multicultural territorial division of labor in which the production and exchange of basic goods and raw materials is necessary for the everyday life of its inhabitants." This division of labor refers to the forces and relations of production of the world economy as a whole and it leads to the existence of two interdependent regions, which have different culture and geoeconomic location: core region focuses on capital-intensive production, whereas periphery region is based on labor-intensive one (Goldfrank, 2000). Semi-peripheral states act

as a buffer zone between core and periphery, and have a mix of activities and institutions (Skocpol, 1977). The dynamics of world system generates an *unequal exchange*, which is due to the systematic transfer of surplus from traditional sectors in the periphery to the high-technology and industrialized sectors in the core region (Goldfrank, 2000)[1]. This process leads to a *capital accumulation* at a global scale, and involves the appropriation and transformation of peripheral surplus. In short, the world system has a power hierarchy between *core* and *periphery*, in which powerful and wealthy "core" societies dominate and exploit weak and poor "peripheral" societies (Figure 2).
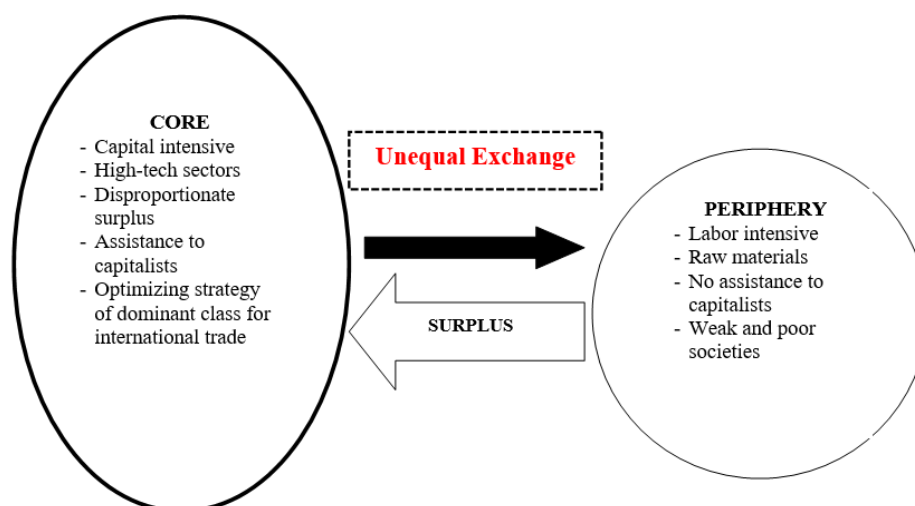

Figure 2. *Aspects of the interaction between core and periphery within world-systems theory*

According to Wallerstein (1974), the history has had two types of large-scale social systems: (1) empires with a functional economic division of labor and an approach of tribute-collecting imperial state, and (2) world economies with multiple political sovereignties, no one of which can control the entire economic system. A world economy should be more able than a world empire to sustain economic development because economic subjects have more freedom to maneuver, appropriate and reinvest economic resources and surplus. This world economy, such as capitalism from the sixteenth century to the present, has a division of labor among three regions (core, semiperiphery, and periphery) linked together by a world trade market in bulk commodities (necessities for consumption of population). Each geoeconomic region of the world economy has an economic structure based on a mixture of economic activities (e.g., industry and products from multi-cultivation in agriculture within core areas; products from mono-cultivation in periphery areas) and labor control (e.g., skilled wage labor in the core; sharecropping in the semiperiphery; and slavery or "coerced cash-crop labor" in the periphery). Economic rewards of these zones are differentially; in particular, core areas obtain and sustain a disproportionate surplus (Figure 2). Moreover, the economic structure of each region supports a dominant class oriented towards the world market and nations of certain strength operate in the interests of that dominant class. According to Wallerstein (1974), the differential strength of multiple states within world capitalist economy is crucial for maintaining the stability of overall system. In this context, the

[1]cf., Coccia, 2005a, 2015b, 2016, 2017b, 2018e, 2018f.

strong nations reinforce and increase the differential flow of surplus from periphery to the core zone because they can provide "extra-economic" assistance to allow their capitalist classes to manipulate and enforce trade in their favor on world market (Skocpol, 1977, pp.1076-77).

This Wallerstein's model of the world capitalist system is based on a two-step reduction: first, a reduction of socioeconomic structure to determination by world market opportunities and technological production possibilities; and second, a reduction of state structures and policies to determination by dominant class interests.

The first reduction is based on the mode of labor control adopted in each region by dominant classes oriented to world market. Wallerstein (1974) argues that dominant classes choose freely among alternative strategies of labor control by assessing rationally the best means for maximizing profits, given the geographical, demographic, technological, and labor-skill conditions in which they operate, and given the profitable possibilities they face for selling particular products on the world market. Wallerstein (1974) treats "labor control" primarily as a market-optimizing strategy of dominant classes. Moreover, the forces of marketplace maintain established differences of occupational structure among regions: "a capitalist world-economy essentially rewards accumulated capital, including human capital, at a higher rate than 'raw' labor power" (Wallenstein, 1974, p.350). Wallerstein (1974, p.401, original emphasis) also argues that: "Once we get a difference in the strength of the state-machineries, we get the operation of 'unequal exchange' which is enforced by strong states on weak ones, by core states on peripheral areas. Thus capitalism involves not only appropriation of surplus-value by an owner from a laborer, but an appropriation of surplus of the whole world-economy by core areas".

The second reduction of the Wallerstein's model is that differences of strength and policies among states located in different zones of the world system are explained as the result of differences in regional rates of surplus appropriation and, especially, as the expressions of different world market interests of the dominant classes within national political areas (Wallenstein, 1974, chap. 3, *passim*). On the one hand, the dominant capitalist classes want state protection for industry and their control of international trade; on the other hand, the periphery has weak states and dominant capitalist classes are interested in profiting from direct dealings with merchants of core areas. The functioning of the world system is that if states were equally strong (or potentially equally strong across the major regions): "they would be in the position of blocking the effective operation of transnational economic entities whose locus were in another state. It would then follow that the world division of labor would be impeded, the world-economy decline, and eventually the world- system fall apart" (Wallenstein, 1974, p.355).

In brief, mechanisms of world system are directly or indirectly an expression of *capitalist class interests* that reshape institutions and their relations to satisfy their world market opportunities. Moreover, although dominant capitalist classes maximize their world market trading advantages, only the core-area capitalists want, need, and get the extra-economic assistance of strong states, while peripheral capitalists do not.

Wallerstein's theory can explain patterns of economic development in early modern Europe, whereas it does not clarify the patterns of development of absolute monarchies. In fact, once capitalist relations of production and accumulation were firmly established in England, the European states ensured that capitalist relations would spread both across Europe and over the entire globe through state initiatives by competing powers and through military conquests, as well as through market expansion. To put differently, according to this theory: "In the core states there

evolved relatively strong State systems, with an absolute monarch and a patrimonial State bureaucracy working primarily for this monarch. The venality of office and the development of standing armies based on mercenaries were the critical elements in the establishment of such a bureaucracy" (Wallenstein 1972, p.96). In general, the historical evidence does not fit the overall pattern implied by Wallenstein (1974). Moreover, economic division of labor within Wallerstein's theory (1974, pp.354-55) cannot be hold together as a "system" and the differential flow of surplus to the core is likely to be disrupted in later stages of world capitalist development.

3. Conclusive observations

Brenner (1976) shows that markets cannot primarily explain social-structural transformations or economic developments because, depending on preexisting institutional patterns of class relations, different classes may be in the best position to take advantage of available trade opportunities and thereby they have their particular positions strengthened. Although Wallerstein (1974) asserts that the world system is dynamic, he does not provide a theoretical explanation of why developmental processes occur.

The only definite dynamics of the Wallerstein's world capitalist system is market processes: commercial growth, worldwide recessions, and the spread of trade in necessities to new regions of the globe. According to Skocpol (1977), although the global expansion depends on the emergence and diffusion of major technological innovations (Coccia, 2014, 2017, 2018), it is unexplained by Wallenstein (1972, 1974).

Moreover, the differential appearance of absolutist states in early modern Europe and their effects upon economic development are not adequately explained by Wallerstein's theory of world capitalist system. Patterns of state development are better explained by Anderson (1974) and Tilly (1975). These scholars suggest that, although no monocausal explanation of state building is possible, two sets of variables can clarify relations. Firstly, internal class structures were important because created different possibilities for monarchs to extract resources and encouraged them to use available resources in different ways. Secondly, transnational structures were important, including the networks of trade and economic interdependence to which Wallerstein points. In this context, other factors supporting the development of core and periphery regions that deserve to be investigated in this theoretical framework are education and higher education systems, low corruption, low criminality, high democracy, good economic governance, high innovative outputs, etc. (Coccia, 2010, 2010a, 2010b, 2014, 2014a, 2014b, 2014c, 2017, 2017a, 2018a-l). To conclude, Wallerstein (1972, 1974) has given imperfect answers about the historical development of capitalism. However, the proposed theory has raised important socioeconomic issues for future challenges of a comprehensive theory of development.

References

Anderson, P. (1974). *Lineages of the Absolutist State*. New Left, London.
Braudel, F. (1994). *A History of Civilizations,* (Trans. Richard Mayne), The Penguin Press, New York.
Braudel, F. (1996). *The Mediterranean and the Mediterranean World in the Age of Philip II*, University of California Press, Berkeley.
Brenner, R. (1976). Agrarian class structure and economic development in pre-industrial Europe. *Past and Present*, 70(1), 30-75. doi. 10.1093/past/70.1.30
Chase-Dunn, C., & Grimes, P. (1995). World-Systems analysis. *Annual Review of Sociology*, 21, 387-417. doi. 10.1146/annurev.so.21.080195.002131
Chirot, D., & Hall, T.D. (1982). World-System Theory. *Annual Review of Sociology*. 8, 81-106. doi. 10.1146/annurev.so.08.080182.000501

Coccia, M. (2005a). A Scientometric model for the assessment of scientific research performance within public institutes, *Scientometrics*, 65(3), 307-321. doi. 10.1007/s11192-005-0276-1

Coccia, M. (2005b). Metrics to measure the technology transfer absorption: analysis of the relationship between institutes and adopters in northern Italy. *International Journal of Technology Transfer and Commercialization*, 4(4), 462-486. doi. 10.1504/IJTTC.2005.006699

Coccia, M. (2009). What is the optimal rate of R&D investment to maximize productivity growth?, *Technological Forecasting & Social Change*, 76(3), 433-446. doi. 10.1016/j.techfore.2008.02.008

Coccia, M. (2010). Democratization is the driving force for technological and economic change, *Technological Forecasting & Social Change*, 77(2), 248-264. doi. 10.1016/j.techfore.2009.06.007

Coccia, M. (2010a). The asymmetric path of economic long waves, *Technological Forecasting & Social Change*, 77(5), 730-738. doi. 10.1016/j.techfore.2010.02.003

Coccia, M. (2010b). Spatial patterns of technology transfer and measurement of its friction in the geo-economic space, *International Journal of Technology Transfer and Commercialisation*, 9(3), 255-267. doi. 10.1504/IJTTC.2010.030214

Coccia, M. (2010c). Public and private investment in R&D: complementary effects and interaction with productivity growth, *European Review of Industrial Economics and Policy*, 1, 1-21.

Coccia, M. (2011). The interaction between public and private R&D expenditure and national productivity. *Prometheus-Critical Studies in Innovation*, 29(2), 121-130. doi. 10.1080/08109028.2011.601079

Coccia, M. (2014). Religious culture, democratisation and patterns of technological innovation. *International Journal of Sustainable Society*, 6(4), 397-418. doi. 10.1504/IJSSOC.2014.066771

Coccia, M. (2014a). Structure and organisational behaviour of public research institutions under unstable growth of human resources, *Int. J. Services Technology and Management*, 20(4/5/6), 251–266. doi. 10.1504/IJSTM.2014.068857

Coccia, M. (2014b). Driving forces of technological change: The relation between population growth and technological innovation-Analysis of the optimal interaction across countries, *Technological Forecasting & Social Change,* 82(2), 52-65. doi. 10.1016/j.techfore.2013.06.001

Coccia, M. (2014a). Emerging technological trajectories of tissue engineering and the critical directions in cartilage regenerative medicine. *Int. J. Healthcare Technology and Management*, 14(3), 194-208. doi. 10.1504/IJHTM.2014.064247

Coccia, M. (2014). Socio-cultural origins of the patterns of technological innovation: What is the likely interaction among religious culture, religious plurality and innovation? Towards a theory of socio-cultural drivers of the patterns of technological innovation, *Technology in Society*, 36(1), 13-25. doi. 10.23760/2421-7158.2017.004

Coccia, M. (2015). The Nexus between technological performances of countries and incidence of cancers in society. *Technology in Society*, 42, 61-70. doi. 10.1016/j.techsoc.2015.02.003

Coccia, M. (2015a). Patterns of innovative outputs across climate zones: the geography of innovation, *Prometheus. Critical Studies in Innovation*, 33(2), 165-186. doi. 10.1080/08109028.2015.1095979

Coccia, M. (2015b). Technological paradigms and trajectories as determinants of the R&D corporate change in drug discovery industry. *International Journal Knowledge and Learning*, 10(1), 29-43. doi. 10.1504/IJKL.2015.071052

Coccia, M. (2016). Problem-driven innovations in drug discovery: co-evolution of radical innovation with the evolution of problems, *Health Policy and Technology*, 5(2), 143-155. doi. 10.1016/j.hlpt.2016.02.003

Coccia, M. (2017). Sources of technological innovation: Radical and incremental innovation problem-driven to support competitive advantage of firms. *Technology Analysis & Strategic Management*, 29(9), 1048-1061. doi. 10.1080/09537325.2016.1268682

Coccia, M. (2017b). Asymmetric paths of public debts and of general government deficits across countries within and outside the European monetary unification and economic policy of debt dissolution, *The Journal of Economic Asymmetries*, 15, 17-31. doi. 10.1016/j.jeca.2016.10.003

Coccia, M. (2018). A theory of the general causes of long waves: War, general purpose technologies, and economic change. *Technological Forecasting & Social Change*, 128, 287-295. 10.1016/j.techfore.2017.11.013

Coccia, M. (2018a). The relation between terrorism and high population growth, *Journal of Economics and Political Economy*, 5(1), 84-104.

Coccia, M. (2018c). Violent crime driven by income Inequality between countries, *Turkish Economic Review*, 5(1), 33-55.

Coccia, M. (2018d). The origins of the economics of innovation, *Journal of Economic and Social Thought*, 5(1), 9-28.

Coccia, M. (2018e). Theorem of not independence of any technological innovation, *Journal of Economics Bibliography*, 5(1), 29-35.

Coccia, M. (2018e). Theorem of not independence of any technological innovation, *Journal of Social and Administrative Sciences,* 5(1), 15-33.

Coccia, M. (2018f). Classification of innovation considering technological interaction, *Journal of Economics Bibliography*, 5(2), 76-93.

Coccia, M. (2018g). An introduction to the methods od inquiry in social sciences, *Journal of Social and Administrative Sciences,* 5(2), 116-126.

Coccia, M. (2018h). Growth rate of population associated with high terrorism incidents in society, *Journal of Economics Bibliography*, 5(3), 142-158.

Coccia, M. (2018i). Measurement and assessment of the evolution of technology with a simple biological model, *Turkish Economic Review*, 5(3), 263-284.

Coccia, M. (2018j). Functionality development of product innovation: An empirical analysis of the technological trajectories of smartphone, *Journal of Economics Library*, 5(3), 241-258.

Coccia, M. (2018k). A theory of classification and evolution of technologies within a generalized Darwinism, *Technology Analysis & Strategic Management*, doi. 10.1080/09537325.2018.1523385

Coccia, M. (2018l). Optimization in R&D intensity and tax on corporate profits for supporting labor productivity of nations, *The Journal of Technology Transfer*, 43(3), 792-814. doi. 10.1007/s10961-017-9572-1

Coccia, M., & Bellitto, M. (2018). Human progress and its socioeconomic effects in society, *Journal of Economic and Social Thought*, 5(2), 160-178.

Coccia, M., & Igor, M. (2018). Rewards in public administration: a proposed classification, *Journal of Social and Administrative Sciences,* 5(2), 68-80.

Coccia, M., & Cadario, E. (2014). Organisational (un)learning of public research labs in turbulent context, *International Journal of Innovation and Learning*, 15(2), 115-129. doi. 10.1504/IJIL.2014.059756

Coccia, M., Falavigna, G., & Manello, A. (2015). The impact of hybrid public and market-oriented financing mechanisms on scientific portfolio and performances of public research labs: a scientometric analysis, *Scientometrics*, 102(1), 151-168. doi. 10.1007/s11192-014-1427-z

Coccia, M., & Rolfo, S. (2010). New entrepreneurial behaviour of public research organizations: opportunities and threats of technological services supply, *International Journal of Services Technology and Management*, 13(1/2), 134-151. doi. 10.1504/IJSTM.2010.029674

Goldfrank, W.L. (2000). Paradigm regained? The rules of Wallerstein's World-System method. *Journal of World-Systems Research*. 6(2), 150-195. doi. 10.5195/jwsr.2000.223

Lewellen, T.C. (1995). *Dependency and Development: An Introduction to the Third World*, Westport, Conn. Bergin & Garvey.

Rostow, W.W. (1960). *The Stages of Economic Growth: A Non-Communist Manifesto.* Cambridge University Press, Cambridge.

Schumpeter, J.A. (1911). His other books include *Theorie der wirtschaftlichen Entwicklung* (1911; *The Theory of Economic Development*) and *Business Cycles: A Theoretical, Historical, and Statistical Analysis of the Capitalist Process,* Vol.2 (1939; rev. ed. 1964).

Schumpeter, J.A. (1942). *Capitalism Socialism and Democracy*, Harper Collins Publishers, New York.

SeymourLipset, M. (1955). Some social requisites of democracy: economic development and political legitimacy, *American Political Sciences Review*, 53(1), 69-105. doi. 10.2307/1951731

Skocpol, T. (1977). Review: Wallerstein's World Capitalist System: A theoretical and historical critique, *American Journal of Sociology*, 82(5), 1075-1090. doi. 10.1086/226431

Tilly C. (1975). *The Formation of National States in Western Europe*. Princeton University Press. Princeton, N.J.

Todaro, M.P., & Smith, S.C. (2003). *Economic Development*, Parson, Addison Wesley Harlow, England.

Wallerstein, I. (1972). Three paths of national development in Sixteenth - Century Europe. *Studies in Comparative International Development*, 7(2), 95-101. doi. 10.1007/BF02800528

Wallerstein, I. (1974). The rise and future demise of the World Capitalist System: Concepts for comparative analysis. *Comparative Studies in Society and History*, 16(4), 387-415. doi. 10.1017/S0010417500007520