Chapter 4
An Empirical Study on the Relationship Between Economic Growth and E-Commerce

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ABSTRACT

Electronic commerce (e-commerce) has started to become an important explanatory component of economic growth via innovations in information technology in recent years. Studies within this framework show that countries that invest more in e-commerce have reached higher growth rates. In this regard, this chapter has examined the relationship between e-commerce represented by two sub-components as fixed and mobile-cellular telephone subscriptions and economic growth for chosen countries (BRICS and Turkey) with 2000-2016 annual data by using Panel VAR, impulse response analysis, and variance decomposition. Results of the study show that economic growth and e-commerce are related. These results suggest that countries that want to increase their economic growth rate should focus on policies to increase e-commerce volume.

INTRODUCTION

Science, technology and innovation are like the arms of a triple helix. The rise of one of them depends on the rise of the others. In this sense, innovation policies and science and technology policies must be thgought as a whole and in most cases, innovation and science processes should be included in science and technology policies. When a new fact is mentioned in a country, this innovation should be supported by science and technology. When the scientific and technological developments in all over the world are examined, it is necessary to transform scince and technology to economic and social benefit as well as developing science and technology (Özsağır, 2013, p. 43). Therefore, the conversion of the

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developments in science and technology into gain constitutes the essence of the matter. One of the most important examples of this is the developments in electronic commerce.

Computer age, also known as the third industrial revolution, is a product of technological developments. With the occurance of computers and internet at the end of 1980s, there was a revolution in both communication and trade in the global sense. By the beginning of the 21st century, a process where large capitals could be transferred across all over the world by means of a single button has become experienced. As a result of these revolutionary developments, there has been a significant economic growth on global scale and technology has been considered as the fuel of the economy (Conway, 2009, pp. 176-177).

As the developments in technology have become the driving force of global competition -especially developments in internet technology-, electronic commerce has become increasingly widespread all over the world. The developments in information technology have made international trade easier and the economies that can internalize this process have achieved significant growth dynamics. Countries such as China and India are leading the way in order to gain a superior growth trend by bringing new technologies in international trade (Conway, 2009, pp. 176-177). Since 1990s, it has been observed that businesses that adopt electronic commerce as a new business management style have positive developments in terms of productivity and employment. The rapid expansion of the internet has brought along important developments in terms of trade and competition not only from a national perspective but also internationally. Today, the developments in information and communication areas have made e-commerce an important concept for all markets and sectors and it is stated that although it has been based on a decade of history since electronic commerce has become publicly known, it has existed for thirty years.

Electronic commerce or e-commerce is known as an e-business defined as the transfer of goods and services through electronic communication in the light of technological developments (Tian & Stewart, 2008, p. 1). It is stated that e-commerce is related to internet economy and digital economy. With its scope, the usage of new information and communication technologies constitutes the focal point. The internet economy means that generating income of economic activity through goods and services related to internet (Da Costa, 2003). For this reason, e-commerce before the internet is not named as internet economy. Digital economy is based on digital technologies such as computers, software and digital networks, but all activities in the digital economy aren't e-commerce activities. For example, purchasing a computer material from a showcase vendor isn't an activity of e-commerce. So it is stated that e-commerce, internet economy and digital economy are related to each other but have different content.

Although electronic commerce doesn't have a single common definition, it is possible to encounter different definitions made from many different aspects. According to Wigand (1997), electronic commerce is the application of information and technology, until it reaches its goal throughout the value chain of the electronically conducted business process. According to Kalakota and Whinston (1997), electronic commerce is the process of implementing technologies for business transactions and automation of business processes, while Clarke (1999) defines e-commerce as the process of conducting the trade of goods and services through telecommunication-based equipments. This indicates that perspectives about e-commerce can arise in many aspects such as communication, business process, value system, online service and electronic processing. In this context, the definition of electronic commerce can be expanded to generate business value that that creates and uses new business opportunities at any time.

The narrowest definition of electronic commerce is that commercial transactions and payments are made to consumers through open networks such as the internet. Here only the goods and services that sold to consumers and payments made in return are included in the scope of this. There is no clearness