

# Chapter 1

## The Macroeconomic Impacts of E-Business on the Economy

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### INTRODUCTION

The growing use of information and communications technology (ICT) by business—e-business—has a profound impact on the economy. E-business lowers costs and increases the choices available to consumers and firms. These microeconomic changes work their way through the economy and ultimately influence macroeconomic conditions. Overall, e-business benefits the economy in many ways. Nevertheless, not all the effects of e-business on macroeconomic conditions are positive, and some aspects of e-commerce may limit the effectiveness of monetary policy.

E-business changes the macroeconomy in several beneficial ways. Some gains are static in nature, arising

from the more efficient use of existing resources. For example, increases in productivity increase a nation's GDP. In addition, by lowering search and transaction costs, e-business unleashes deflationary pressures (Willis, 2004). Other gains are dynamic, altering the path national growth takes. By lowering the cost of transferring and employing knowledge, ICT enables greater R&D and innovation, which is crucial to long-run economic growth.

E-business exacerbates some macroeconomic policy challenges, and raises new ones. E-commerce crosses state borders seamlessly, resulting in lost sales tax revenue for state and local governments (Goolsbee, 2001). Consequently, e-business has potentially severe implications for fiscal policy and government financing, and policymakers continue to seek methods to tax e-business (Redpath, Redpath, & Ryan, 2007). The rise of electronic payments

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(e-payments) and the advent of e-money, an electronic medium of exchange separate from legal tender issued by a central bank, also complicate monetary policy and may alter its goals.

This article covers some of the impacts e-business has on the economy, emphasizing macroeconomic effects. Evidence from various empirical studies examining the impact greater use of ICT by business has on U.S. GDP is presented, followed by a review of the ways e-business affects monetary and fiscal policy. Suggested directions for future research and a discussion of issues that e-business presents policymakers close out the article.

## **BACKGROUND**

At the microeconomic level, e-business increases the productivity of firms and enhances the economic welfare of consumers.<sup>1</sup> Use of ICT by business increases productivity and profits by lowering search and transaction costs, enabling greater specialization, and broadening the market for trading goods (Wen, 2004). Through business-to-business (B2B) transactions, firms can connect their inventory systems with each other to order additional product quickly without using much labor in the process (Lucking-Reiley & Spulber, 2001). Business-to-consumer (B2C) e-business expands the marketplace, producing greater competition, lower prices, and broader consumer choice (Willis, 2004; Banham, 2005). Collectively, these reductions in cost and increases in productivity and consumer choice significantly benefit the economy.

The next section explains how e-business affects GDP, national growth, and monetary and fiscal policy. A country's GDP, which is a measure of total economic output, is a function of its physical and human capital, other resources, and the production processes used to turn inputs into output. The use of ICT by business increases GDP and economic growth by affecting all of these

elements. To begin with, the information industry is itself a category in the GDP accounts, making up nearly four percent of US national income in 2008. More important is the way ICT makes other industries more productive. Investment in ICT increases the amount of physical capital, resulting in increased domestic output across the economy. E-business also makes labor and the production process itself more efficient, which will result in long run economic growth.

Monetary policy refers to how a central bank uses the money supply to influence interest rates, with the purpose of promoting sustainable economic growth. A key goal of monetary policy in most nations is price stability. E-business can produce significant cost reductions that lead to deflationary pressures. E-payments and e-money also affect monetary policy by creating "inside money", which is money produced by the private sector instead of by the central bank. While mainstream monetary economics takes the passive view of inside money (i.e., that it has no role in the transmission of monetary policy; Stracca, 2007), some commentators argue that inside money should change the *goal* of policy.<sup>2</sup>

Fiscal policy refers to actions of the government involving spending or taxation undertaken with the goal of economic growth or stability. E-commerce creates new avenues for avoidance of states sales taxes, and thus may limit a state government's power to raise revenue and fund its spending.

## **THE MACROECONOMIC IMPACTS OF E-BUSINESS**

### **Impact on National Growth**

The theoretical implications of e-business on the macroeconomy are far reaching, because ICT increases productivity, enhances competition, and broadens consumer choice. However, quantifying how e-business affects the economy is difficult,

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