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978-1-108-47968-4 — Prospects for Economic Growth in the United States  
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PART I

OVERVIEW

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## 1

## Introduction

John W. Diamond and George R. Zodrow

## 1.1 Prospects for Growth

Robust economic growth has long been the engine of prosperity in the United States, and has resulted in a sustained increase in living standards that has made the US economy the envy of much of the modern world. The prospects for future economic growth in the United States, however, are uncertain. For example, some researchers argue that technological advances, especially in the area of artificial intelligence, are likely to result in automation-related rapid increases in future growth – indeed, to the point that serious shortages in labor demand may result. In marked contrast, other observers believe that recent economic, demographic, and political trends, including an educational system that is ineffective in many dimensions, increasing income inequality, an aging population coupled with a lower labor force participation rate, and the absence of the political will to address large-scale fiscal imbalances, have created pervasive headwinds that will seriously limit future US economic growth.

This volume brings together a distinguished group of world-renowned economists to explore the challenges of maintaining vigorous economic growth in the United States, including issues related to demographics, social insurance programs, technological progress, human capital accumulation, immigration, income inequality, financial institutions, and fiscal policy. The volume consists of a set of chapters that were presented as papers at a conference on “Prospects for Economic Growth in the United States,” which was one of a series of events celebrating the twenty-fifth anniversary of Rice University’s Baker Institute for Public Policy. The conference was sponsored by the Baker Institute’s Center for Public Finance and held at Rice on December 6–7, 2018.

## 1.2 A Broad Perspective on the Future of Economic Growth

The volume begins with a broad perspective on the future of economic growth in the United States by Martin Feldstein, who passed away on June 11, 2019.<sup>1</sup> Feldstein first notes that in recent years the growth rate in the United States has exceeded the growth rates in other industrial countries. He identifies ten key structural characteristics of the US economy that have contributed to this superior economic performance.

Feldstein then argues that the official data on real GDP understate actual economic growth, as they mismeasure changes in the quality of existing goods and services or the contribution to GDP attributable to new products and services. In particular, he notes that cost-based methods of measuring improvements in the quality of existing goods and services do not capture the many cost-reducing ways in which producers improve their products. In addition, he argues that current measurement techniques understate both the value of new goods and services and their declines in cost over time. Feldstein stresses that this understatement of economic growth is of considerable significance, as it contributes to the pessimism about the effectiveness and desirability of the economic and political system in the United States that has had far-reaching political implications in recent years. Moreover, this effect is augmented by calculations of the time path of real incomes that ignore compensation in the form of fringe benefits, including health insurance, and government transfers, both of which have grown in relative importance in recent years.

Feldstein then turns to the effects of current fiscal policy on the prospects for growth, arguing that projected increases in deficits and in the national debt, especially when calculated taking into account changes from current law that seem likely to be enacted (e.g., elimination of some of the tax cut phase-outs scheduled under the Tax Cuts and Jobs Act (TCJA) passed in 2017), are likely to slow future economic growth. In particular, he argues that higher deficits will absorb an ever-increasing share of national savings, reducing funds available for business investment and research and development, which may also be negatively affected by higher interest rates attributable to higher levels of debt. Moreover, he notes that expectations of higher future tax rates to reduce future deficits and the national debt also discourage current investment.

Feldstein considers two potential solutions to the fiscal problems that he concludes are diminishing prospects for future growth. First, he argues that

<sup>1</sup> We thank James Poterba for his assistance in making the final revisions to Professor Feldstein's paper.

raising revenues is part of the solution but should be done in such a way as to minimize the negative effects of taxation on economic growth. For example, he stresses that reducing tax expenditures (e.g., items such as the deduction for home mortgage interest and the exclusion for employer-provided health insurance) would both raise revenue and reduce costly distortions attributable to the tax preferences for these consumer expenditures. Similarly, he notes that a carbon tax (discussed by Diamond and Zodrow in Chapter 8 of this volume) would both raise revenue and reduce carbon emissions by aligning the private and social cost of emissions.

Second, Feldstein notes that much of the fiscal problem in the United States is attributable to rising deficits in the Social Security, Medicare, and Medicaid programs. He focuses on Social Security reform, which he notes can be designed to increase future economic growth both by reducing fiscal deficits and by encouraging individuals to save for their own retirement. For example, he supports a gradual increase in the retirement age from sixty-seven to seventy, following the Social Security program changes enacted in 1983. Feldstein concludes by discussing a more comprehensive reform proposal that he designed with Andrew Samwick (1988); under this plan, Social Security benefits would be supplemented with returns from Personal Retirement Accounts that would be funded by a mixture of private and government contributions (including 1.5 percent from individual earnings and 1.5 percent from current payroll taxes) and invested in a mixture of stocks and bonds.

The next two chapters of the volume examine two key aspects of how labor markets affect economic growth – the accumulation of human capital and immigration.

### 1.3 Human Capital and Economic Growth

In Chapter 3, Flávio Cunha of Rice University examines how the development of human capital affects economic growth. He begins by making three critical observations. The first is that labor productivity in the United States has declined in recent years, from an average rate of growth of 2.75 percent from 1948 to 1981 to slightly less than 2 percent from 1982 to 2016. The second is that income inequality has been increasing over the same period; for example, using one measure of average weekly earnings, earnings at the ninetieth percentile of the wage distribution increased by 30 percent from 1948 to 2016, while the fiftieth percentile experienced no growth over the same time period and the tenth percentile declined by 12 percent. The third is that human capital accumulation in the United

States has declined relative to other Organisation for Economic Co-operation and Development (OECD) countries over the same time period. For example, in 2014, the share of the population with a tertiary education in the United States was fourth among OECD nations for individuals aged fifty-five to sixty-four, but only twelfth for individuals between twenty-five and thirty-four years of age, as the United States ranks next to last in the growth rate of this population share over the time period.

Cunha argues that both lower productivity growth and greater income inequality can be at least partially attributed to the decline in human capital accumulation in the United States. A larger stock of human capital facilitates technology adoption and technological progress, which, in turn, promotes growth in labor productivity. Using the examples of the biotechnology and semiconductor industries, Cunha stresses that this is especially important for economic growth since technological advances are largely nonrival and thus can be widely utilized (rather than just by the developer of the technological advance). Moreover, a smaller supply of skilled labor leads to a higher skill wage premium, which exacerbates income inequality. Policies that would increase human capital formation in the United States would thus help address issues of both declining productivity growth and accelerating income inequality.

Cunha begins his discussion of possible policy interventions by noting that the downward trend in human capital accumulation has occurred despite steadily increasing access to college, especially for low-income students. The key reasons that increasing enrollments have not led to large increases in human capital among disadvantaged students are that (1) their graduation rates are relatively low, primarily because such students are not well prepared for college, and (2) high-ability, low-income students tend not to apply to the selective institutions that would have the most dramatic positive impact on their accumulation of human capital.

Cunha notes briefly that the latter problem might be addressed by providing low-income students with more information about the accessibility and affordability of highly selective institutions. However, he focuses on how to improve college readiness for low-income students to increase the likelihood that they will complete their post-secondary education. He notes that empirical research has established that both cognitive skills and socioemotional skills are critical to increasing the likelihood that a student graduates from college. However, it is very difficult to increase these skills among disadvantaged children because empirical research also indicates that they start to lag behind in the development of both cognitive and socioemotional skills (as well as health) early in childhood, that these

deficits increase during early school years, and that, in relative terms, these shortfalls have been increasing in recent years. Cunha convincingly documents that these cognitive and socioemotional deficits are attributable to inequality in the investments in the human capital of children, in terms of both the quantity and the quality of interaction time between parents and children as well as inequality in the expenditures that facilitate a child's human capital formation.

Cunha concludes by summarizing experimental evidence on interventions designed to increase investments in the human capital of disadvantaged children. For example, numerous programs have focused on providing early childhood education and estimating both the short-run effects on skills and investments in human capital, as well as the long-run impacts on outcomes relating to labor market performance, educational attainment, and participation in criminal activities. Other programs attempt to improve the human capital accumulation of children by educating parents through home visitations; one example is the Nurse-Family Partnership, which provides disadvantaged first-time mothers with instructional home visits that begin during pregnancy and continue until the child turns two years old. Other programs target the formation of noncognitive skills in school-age children, in some cases coupled with parental interventions. Cunha describes in detail both the programs and the extent to which they are successful (e.g., programs that focus on improving cognitive skills typically improve such skills in the short run but the effect often dissipates over time), as well as the characteristics of the programs that were not successful. He concludes that policies that will be successful in increasing the human capital accumulation of disadvantaged children must start early by changing their home environments as well as by engaging parents to improve the quality of their interactions with their children. In addition, Cunha emphasizes that the empirical evidence strongly suggests that efforts that are successful, especially in the long run, are primarily driven by programs that improve noncognitive skills, an area that deserves more focus in the future.

#### 1.4 Immigration and Economic Growth

George Borjas of Harvard University provides a theoretical and empirical analysis of how increased immigration would affect economic growth in the United States. He begins by noting that the fact that 16.6 percent of workers in the US labor market in 2016 were foreign-born naturally implies that immigrants are responsible for a sizable fraction of US GDP,

and that an increase in immigration would naturally lead to a corresponding increase in GDP. It is far less clear, however, that such an immigrant supply shock would necessarily increase per capita income or provide net gains to natives; the latter topic is the focus of his analysis.

Borjas begins by examining various theoretical aspects of the effects of an increase in immigration on overall and per capita growth. He shows that within the context of the canonical Solow growth model, a one-time increase in immigration increases output but has no effect on per capita income, as the economy returns to its original steady state after a transition period. In contrast, a permanent increase in the rate of immigration is effectively an increase in the growth rate of the labor force. Borjas shows that although such an increase in immigration increases the level of output, it results in a decline in per capita income, as a higher rate of labor supply growth implies a lower equilibrium effective capital–labor ratio in both the short and long runs. Moreover, he argues that this theoretical prediction is borne out by the empirical analyses that have examined this issue, which show that the “correlation between immigration and per capita income is, at best, zero” (Chapter 4, p. 84). Another way of thinking about the effects of immigration is whether there is an “immigration surplus” – an increase in the wealth of the “native” population – and Borjas shows that, in his model, the immigration surplus is modest in the short run and zero in the long run.

Borjas then investigates the implications of various extensions of the standard Solow growth model, focusing on whether such extensions can result in a significantly positive immigration surplus. The first extension adds two types of labor to the model – low-skill and high-skill – and assumes that the influx of immigrants is predominantly either low-skill or high-skill. He notes that the short-run immigration surplus might double if immigrants were all high-skill, although this effect would be significantly attenuated in the long run. However, he shows that a potentially much larger and more permanent immigration surplus may arise when high-skill immigrants have positive human capital externalities on native productivity, since immigration in this case results in a permanent increase in the demand for native labor.

Borjas also examines the effects of immigration on income distribution. He begins by examining several studies of the “Mariel boatlift,” which occurred in April 1980 when Fidel Castro allowed free immigration from Cuba and approximately 125,000 Cubans moved to the United States, increasing Miami’s labor force by approximately 8 percent. Borjas argues that the results obtained in the literature examining the effects of this influx



of immigrants on wages vary widely, depending primarily on the sample studied and because natives may respond to a reduction in local wages by moving elsewhere. An alternative approach designed to avoid the second problem uses national “skill cells” to examine the effects on the wages of specific skill groups of an increase in the number of immigrants in those groups. Borjas observes that this literature, however, has also been relatively inconclusive thus far, as has the empirical literature on whether immigration generates human capital externalities.

Borjas also discusses several additional results from the empirical literature on immigration: (1) more recent cohorts of immigrants have lower earnings potential at the time of entry and do not exhibit earnings growth as fast as earlier cohorts, (2) high-skill immigrant groups experience faster wage growth, indicating a higher contribution to aggregate output, and (3) the long run aggregate fiscal impact of immigrants tends to be positive only if immigrants do not affect the cost of public goods and if one assumes continuation of current policies (rather than Congressional Budget Office (CBO) projections of the likely path of such policies), but the long-run impact of high- (low-) skill immigrants is always positive (negative).

Borjas concludes that if the goal of immigration policy is to help the United States achieve a high rate of economic growth, it should adopt a policy favoring immigration of high-skill individuals. He readily acknowledges, however, that it is not clear that immigration policy should be set primarily to promote economic growth.

The next two chapters of the volume examine the interplay between technology and economic growth.

### 1.5 Technology and the Future of Economic Growth

In Chapter 5, Glenn Hubbard of Columbia University examines the role that ongoing and future technological advances are likely to play in determining future economic growth in the United States. He casts the issue as a debate between two groups of researchers. The first is the “techno-optimists,” such as Andrew McAfee and Erik Brynjolfsson, whose 2017 book *Machine, Platform, Crowd* emphasizes recent and future productivity and growth enhancing developments in artificial intelligence and robotics. These researchers believe that the United States is about to enter a new era of technology-induced increases in productivity that will lead to faster economic growth – while nevertheless recognizing that there may be a long time period between technological advance and broad productivity gains. The second group is the “techno-pessimists,” such as Robert Gordon,

whose 2016 book *The Rise and Fall of American Growth* argues that the country faces strong economic headwinds – due to weaknesses in the educational system, increasing income inequality, an aging population coupled with a lower labor force participation rate, and large-scale fiscal imbalances. Moreover, Gordon believes that these headwinds are unlikely to be offset by the relatively modest productivity gains attributable to the current wave of technological advances, which in his view are not as transformative as earlier revolutionary general purpose technologies, such as the steam engine, electricity, the internal combustion engine, improved manufacturing processes, new materials, and advances in communications and media, chemicals, and computers. Gordon concludes that the net result will be significantly diminished economic growth in future years. Other observers, such as Lawrence Summers (2015) and Tyler Cohen (2011), have similarly concluded that the United States is not likely to experience a dramatic revival of productivity growth and instead may enter a new period of “secular stagnation.”

Hubbard stresses that these diametrically opposed views can be reconciled to at least some extent by the fact that there are typically long lags between the introduction of a new technology and its productivity impact, especially since the latter often involves complementary innovations and organizational change in addition to the time required to accumulate the stock of new technology. He also notes that the recent slowdown in productivity growth often stressed by the techno-pessimist camp is not historically unprecedented and, like previous episodes of slow growth, may be reversed. Moreover, he stresses that the recent productivity growth slowdown can at least partly be attributable to economic policies that have reduced investment in new capital equipment and software. Such policies can be – and he argues to some extent recently have been – reversed with lower tax rates on capital income and regulatory reform. More generally, Hubbard argues that microeconomic policies that would promote productivity and economic growth would center on improvements in infrastructure broadly defined, development and dissemination of better management practices including more rapid diffusion of productivity gains from technological advances, and reduced barriers to competition with a focus on policies that would enhance the ability of technologically disruptive younger firms to compete effectively against established firms.

Although he stresses microeconomic policies that would improve productivity and economic growth, Hubbard also notes that economic policies can reduce the impact of the macroeconomic headwinds highlighted