Barro Growth Solutions

"Research on causes of underdevelopment traps and economic growth can be traced back to the work of Young (1928), Rosenstein-Rodan (1943) and Nurkse (1953). The seminal work of Kormendi and Meguire (1985), Grier and Tullock (1998), Barro (1991), Abramovitz (1986) and Baumol (1986), revived the debate on causes of economic growth. Later work by Quah (1997), Salai-I-Martin (1987,2004) has sought to identify the factors driving economic growth across various regions around the world in a manner that would explain why various regions are growing at such diÞerent rates. A stark example is the vast diÞerences in growth rates between Africa and Asia. Asia, on one hand, was at the same level of development withmost African countries in the early sixties, but has since overtaken Africa in the pace of economic growth. Explanations and solutions for Africa\2019s poor growth are found in the research work by Collier (2004), Berthelemy and Varoudakis (1996), Berthelemy and Soderling (2001), and Sacks, et al (2004). The \201Cbig-push\201D initiative, which argues for \2026nancial transfers in developing countries especially, Africa has been pushed heavily by Sacks, et al (2004) and is also linked to the African Commission Report driven by the British government, and accompanied by proposals for debt forgiveness for poorer countries. "--Publisher's website.

I extend existing models of endogenous economic growth to incorporate a government sector. Production involves private capital (broadly defined) and public services. There is constant returns to scale in the two factors, but diminishing returns to each separately. Public services are financed by a flat-rate income tax. The economy's growth rate and saving rate initially rise with the ratio of productive government expenditures to GNP, g/y, but each rate eventually reaches a peak and subsequently declines. If the production function is Cobb-Douglas with an exponent a for public services, then the value g/y = a maximizes the growth rate, and also maximizes the utility attained by the representative consumer. The distortion from the income tax implies that the decentralized equilibrium is not Pareto optimal; in particular, the growth and saving rates are too low from a social perspective. In a command optimum, growth and saving rates are higher, but g/y = a turns out still to be the best choice for the size of government. The command optimum can be sustained by picking the expenditure ratio, g/y = a, and then financing this spending by lump sum taxes. If the share of productive spending, g/y, were chosen randomly, then the model would predict a non-monotonic relation between g/y and the economy's long-term growth and saving rates. However, for optimizing governments, the model predicts an inverse association between g/y and the rates of growth and saving.

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Much of the new growth literature stresses country characteristics, such as education levels or political stability, as the dominant determinant of growth. However, growth rates are highly unstable over time, with a correlation across decades of .1 to .3, while country characteristics are stable, with cross-decade correlations of .6 to .9. Shocks, especially those to terms of trade, play a large role in explaining variance in growth. These findings suggest either that shocks are important relative to country characteristics in determining long-run growth, or that worldwide technological change determines long-run growth while country characteristics determine relative income levels.

Four stylised facts of aggregate economic growth are set up initially. The growth process is interpreted to represent transitional dynamics rather than balanced-growth equilibria. Against this background, the fundamental importance of subsistence consumption is comprehensively analysed. Subsequently, the meaning of the productive-consumption hypothesis for the intertemporal consumption trade-off and the growth process is investigated. Finally, the process of growth is analysed empirically by means of cross-sectional conditional convergence regressions with endogenous control variables.

The long-awaited second edition of an important textbook on economic growth—a major revision incorporating the most recent work on the subject. This graduate level text on economic growth surveys neoclassical and more recent growth theories, stressing their empirical implications and the relation of theory to data and evidence. The authors have undertaken a major revision for the long-awaited second edition of this widely used text, the first modern textbook devoted to growth theory. The book has been expanded in many areas and incorporates the latest research. After an introductory discussion of economic growth, the book examines neoclassical growth theories, from Solow-Swan in the 1950s and Cass-Koopmans in the 1960s to more recent refinements; this is followed by a discussion of extensions to the model, with expanded treatment in this edition of heterogenity of households. The book then turns to endogenous growth theory, discussing, among other topics, models of endogenous technological progress (with an expanded discussion in this edition of the role of outside competition in the growth process), technological diffusion, and an endogenous determination of labor supply and population. The authors then explain the essentials of growth accounting and apply this framework to endogenous growth models. The final chapters cover empirical analysis of regions and empirical evidence on economic growth for a broad panel of countries from 1960 to 2000. The updated treatment of cross-country growth regressions for this edition uses the new Summers-Heston data set on world income distribution compiled through 2000.

This book filters the advancements in economic growth theories with the purpose of translating them into more accessible language. In order to be useful to undergraduate students mathematics was reduced to the minimum needed to assure the working of the deductive method and

to facilitate the articulation between different models. With the same purpose of being useful to the undergraduate students, we include an introductory chapter about basic concepts and measurement problems, which is usually absent in Economic Growth textbooks. But, the fact that the book is directed at undergraduate students doesn't mean that it cannot be helpful for other potential users. Given the rigorous methodology used, graduate students may find it useful as an introduction and a complement to the more sophisticated presentations available in articles and advanced books.Essentials of Economic Growth is divided into seven chapters. Every chapter follows the same outline. It begins with a box that contains several questions to motivate study. Next, specific subjects are analysed and discussed. Chapter ends with a summary and conclusions section, followed by exercises and review questions, which allow students to test their learning. Chap. 1. Well-being and the wealth of nations.Well-being and wealth; wealth of economies and wealth measurement;International comparability methodologies: the market exchange rate, the Atlas method and the purchasing power parity;Nominal and real measures, exchange rate deviation index and comparative price level;Limitations of GDP per capita and the human development index;Different ways of computing growth rates;Distribution of income across countries and regions.Chap. 2. The first growth models: From Smith to Harrod-DomarWhat is a model? Concepts;Economic growth in the classics: Adam Smith and the progressive state; Ricardo's model as the first modeled theory of growth; assumptions and the model dynamics;The Harrod-Domar growth model: short run and long run dynamic equilibrium.Chap. 3. Replies to the Harrod-Domar model: the search for dynamic equilibriumThe neoclassical reply: the Solow growth theory; assumptions; dynamic equilibrium; properties of "steady-state";Post-Keynesian extensions: the Kaldor model; the Pasinetti amendment.Chap. 4. Explaining growth per capita: the Solow model and the stylised facts of economic growthGrowth models and TP (technical progress): neutral TP; definitions of neutrality;The Solow model with technical progress; steady state equilibrium; properties of steady state; transitional dynamics;The Solow model and the empirics of growth; the sources of growth approach; the growth accounting;Kaldor's stylized facts and the Solow model.Chap. 5. Growth empirics: Convergence and the extensions of the neoclassical growth modelThe convergence debate; absolute convergence and conditional convergence; -convergence and -convergence;Extensions and empirical applications of the neoclassical growth model;Human capital and growth; the MRW model; the Solow model with human capital;The Robert Barro's contribute to growth empirics; rationale; main empirical results.Chap. 6. Endogenous Growth: The power of externalitiesThe AK Model;Knowledge as an engine of growth; increasing returns to scale and externalities; Externalities as a compensation for diminishing returns;The first model of Romer: learning by doing externalities; model specification and results; decentralized equilibrium and the social optimum;The Lucas model: human capital production and externalities; model specification and results; decentralized equilibrium and the social optimum.Chapter 7. Endogenous Technical ProgressKnowledge and innovation; imperfect competition and differentiation;The ideas driven growth model: model specification; solution; consistency of the main results;Reconsideration of the ideas production function;Is economic growth driven by ideas?Conclusion: What is the engine of growth?

There is increasing recognition that corruption has substantial, adverse effects on economic growth. But if the costs of corruption are so high, why don’t countries strive to improve their institutions and root out corruption? Why do many countries appear to be stuck in a vicious circle of widespread corruption and low economic growth, often accompanied by ever-changing governments through revolutions and coups? A possible explanation is that when corruption is widespread, individuals do not have incentives to fight it even if everybody would be better off without it. Two models involving strategic complementarities and multiple equilibria attempt to illustrate this formally.

This is a book on deterministic and stochastic Growth Theory and the computational methods needed to produce numerical solutions.

Exogenous and endogenous growth models are thoroughly reviewed. Special attention is paid to the use of these models for fiscal and monetary policy analysis. Modern Business Cycle Theory, the New Keynesian Macroeconomics, the class of Dynamic Stochastic General Equilibrium models, can be all considered as special cases of models of economic growth, and they can be analyzed by the theoretical and numerical procedures provided in the textbook. Analytical discussions are presented in full detail. The book is self contained and it is designed so that the student advances in the theoretical and the computational issues in parallel. EXCEL and Matlab files are provided on an accompanying website (see Preface to the Second Edition) to illustrate theoretical results as well as to simulate the effects of economic policy interventions. The structure of these program files is described in "Numerical exercise"-type of sections, where the output of these programs is also interpreted. The second edition corrects a few typographical errors and improves some notation.

The present paper develops a one-sector aggregate endogenous growth model with intertemporal preference dependence. The resultant model possesses the fundamental property of growth convergence, in the sense that countries with identical parameters regarding technology, preference, and government policy will converge to a steady state with the same (positive) growth rate. A notable tax policy implication of the model is that, even in the absence of externalities, the growth effects of an income tax are shown to be a priori ambiguous and dependent on the relative magnitudes of the tax rate and the tax elasticity of the savings rate.

Economic Growth, second editionMIT Press

One of the most enduring questions in economics involves how a nation could accelerate the pace of its economic development. One of the most enduring answers to this question is to promote exports -either because doing so directly influences development via encouraging production of goods for export, or because export promotion permits accumulation of foreign exchange which permits importation of high-quality goods and services, which can in turn be used to expand the nation's production possibilities. In either case, growth is said to be export-led; the latter case is the so-called "two-gap" hypothesis (McKinnon, 1964; Findlay, 1973). The early work on export-led growth consisted of static cross-country com parisons (Michaely, 1977; Balassa, 1978; Tyler, 1981; Kormendi and Meguire, 1985). These studies generally concluded that there is strong evidence in favour of export-led growth because export growth and income growth are highly correlated. However, Kravis pointed out in 1970 that the question is an essen tially dynamic one: as he put it, are exports the handmaiden or the engine of growth? To make this determination one needs to look at time series to see whether or not exports are driving income. This approach has been taken in a number of papers (Jung and Marshall, 1985; Chow, 1987; Serletis, 1992; Kunst and Marin, 1989; Marin, 1992; Afxentiou and Serletis, 1991), designed to assess whether or not individual countries exhibit statistically significant evidence of export-led growth using Granger causality tests.

This paper discusses the possible causes and consequences of corruption. It provides a synthetic review of recent studies that analyze this phenomenon empirically. In addition, it presents further results on the effects of corruption on growth and investment, and new cross-country evidence on the link between corruption and the composition of government expenditure.

A timely collection of arguments and data for prioritizing responses to some of the most serious problems facing the world, such as climate change, communicable diseases, and financial instability, features contributions by economists from around the world. Simultaneous.

Writing a book is not possible without the generous input of many people. It is a pleasure to have the opportunity to thank at least

some of these people. Prof. Dr. Jochen Michaelis, the supervisor of my dissertation, taught me how to do economic analysis and initiated my interest in labour market is sues. Discussions with him have always been enlightening and have greatly improved the analysis in this book. Moreover, he always encouraged me when I experienced a slump in my motivation. He never lost his calmness and good temper, not even in situations when my need for discussion must have been bothering him. Thanks for that Jochen. I'm indebted to Prof. Dr. Peter Weise for taking over the job as the sec ond referee of my thesis. He gave very valuable comments and sacrificed his christmas holiday to write the referee report as fast as possible. I also want to thank Prof. Stefan Voigt and Prof. Dr. Reinhold Kosfeld, the other two members of the dissertation committee, for the discussion during the defence of the thesis.

Abstract: The empirical study of the impact of trade liberalization has not convinced the skeptics about the economic gains after trade reforms. Some have even argued that trade reforms have led to economic collapse and to deindustrialization. Using a sample that excludes countries that were subject to major exogenous disruptions, the authors note that post-reform economic growth was 1.2 percentage points higher than before the reforms. This is remarkable considering that pre-reform periods were characterized by highly expansionary state policies and large external borrowing, and the crisis years that preceded trade liberalization in the comparisons are eliminated. Through multivariate fixed effects estimations the authors calculate that annual per capita GDP growth rates increased by up to 2.6 percentage points after the trade reforms, compared to a counterfactual that takes into consideration the evolution of several growth determinants. Moreover, trade liberalization has been followed by an acceleration of growth in investment, exports of goods and services, and manufacturing exports, and as opposed to common belief, outward orientation did not lead to significant deindustrialization and actually seems to have increased export diversification. Growth acceleration occurred irrespective of income per capita level and was quite significant in Sub-Saharan Africa. As expected, small countries benefited most from the reforms.

This paper surveys the tax policy implications in various endogenous growth models. The focus is on the long-run growth effects of income, consumption, and investment taxation in models whose engine of growth is the accumulation of human capital, technological innovation, and/or public infrastructure. The results depend on model specifications. This paper also reviews quantitative results from cross-country regressions and simulations, and indicates some statistical and methodological problems to which they are subject. Tax policy implications in endogenous growth models both with tax policy endogenously determined by a political process and with international capital mobility are also discussed.

This book should interest all students and scholars of environmental economics and particularly those interested in the relationship between economic growth and environmental quality.

The proposed SDN discusses the specific macro-critical aspects of women’s participation in the labor market and the constraints that prevent women from developing their full economic potential. Building on earlier Fund analysis, work undertaken by other organizations and academic research, the SDN presents possible policies to overcome these obstacles in different types of countries.

This paper continues the study of optimal fiscal policy in a growing economy by exploring a case in which the government simultaneously provides three main categories of expenditures with distortionary tax finance: public production services, public consumption services, and state-contingent redistributive transfers. The paper shows that in a general equilibrium model with given exogenous fiscal policy, a nonlinear relation exists between the suboptimal longrun growth rate in a competitive economy and distortionary tax rates. When fiscal policy is endogenously chosen at a social optimum, the relation between the rate of growth and tax rates is always negative. These two conclusions suggest that the interaction between fiscal policy and growth may be complicated enough that it cannot be captured in a simple linear model using an aggregate measure of fiscal policy. The sources of nonlinearity include expectation and coordination of fiscal policy, impluse response of government policies, and the presence of positive externality due to government spending.

Part 1 of this volume focusses on globalization. Gains from trade, international competitiveness, labour market issues in open economies, customs unions, dumping and intra-firm trade are the topics of this part. Part 2 puts a stronger emphasis on dynamic economics. Social income, intergenerational transfers, public pension systems, and bequest and gift motives in overlapping generation models are main topics. Economic policies are analyzed in Part 3, including the relation between wage rigidity and migration, several aspects of German financial and monetary policy, as well as tax competition. The volume concludes with institutional issues of globalization, a western view on eastern transition, social cost of rent seeking, and the evolution of social institutions.

Abstract: This is a survey of the literature on Economic Growth. In the introduction we analyze the main differences between exogenous and endogenous growth models using fixed savings rate analysis. We argue that in order to have endogenous growth there must be constant returns to the factors that can be accumulated. A graphical tool is then developed to show that changes in the savings rate have different effects on long run growth in the two kinds of models; we show that only endogenous growth models are affected by shifts in the savings rate. We then explore two versions of the Raasey-Cass-Koopmans neoclassical model where savings are determined optimally; one with exogenous productivity growth and one without

On October 30-31,1981, the Center for the Study of American Business and the Federal Reserve Bank of St. Louis cosponsored their sixth annual conference, "Improving Money Stock Control: Problems, Solutions, and Consequences." This book contains the papers and comments delivered at that conference. The Federal Reserve System has moved, over the last decade, toward setting policy in terms of explicit and publicly announced monetary aggre gate targets - specifically, growth ranges for alternative measures of the money supply. This conference, as the title suggests, was wide ranging in its discussions of monetary control. But rather than dealing with the merits of monetary aggregate targeting, its focus was instead on solving the problems associated with, and evaluating the consequences of, im proved monetary control. The initial paper outlines the current operating procedures followed by the Federal Reserve and suggests reforms to improve monetary control. The following three discussion papers in Part I critically examine the Fed's operating procedures. The two papers in Part II discuss the experi ence of other countries with monetary aggregate targeting - the United Kingdom and Switzerland, respectively - and Part III examines the con sequences of improved monetary control.

A study of how growth is measured in Botswana, Kenya, Tanzania, and Zambia. It looks at average economic growth, GDP measurements, and the association, or lack thereof, between economic growth and orthodox economic policies.

Abstract: The recent literature on endogenous economic growth allows for effects of fiscal policy on long-term growth. If the social

rate of return on investment exceeds the private return, then tax policies that encourage investment can raise the growth rate and levels of utility. An excess of the social return over the private return can reflect learning-by-doing with spillover effects, the financing of government consumption purchases with an income tax, and monopoly pricing of new types of capital goods. Tax incentives for investment are not called for if the private rate of return on investment equals the social return. This situation applies in growth models if the accumulation of a broad concept of capital does not entail diminishing returns, or if technological progress appears as an expanding variety of consumer products. In growth models that incorporate public services, the optimal tax policy hinges on the characteristics of the services. If the public services are publicly-provided private goods, which are rival and excludable, or publiclyprovided public goods, which are non-rival and non-excludable, then lump-sum taxation is superior to income taxation. Many types of public goods are subject to congestion, and are therefore rival but to some extent nonexcludable. In these cases, income taxation works approximately as a user fee and can therefore be superior to lump-sum taxation. In particular, the incentives for investment and growth are too high if taxes are lump sum. We argue that the congestion model applies to a wide array of public expenditures, including transportation facilities, public utilities, courts, and possibly national defense and police.

Technological progress takes the form of improvements in quality of an array of intermediate inputs to production. In an equilibrium that is standard in the literature, all research is carried out by outsiders, and success means that the outsider replaces the incumbent as the industry leader. The equilibrium research intensity involves three considerations: leading-edge goods are priced above the competitive level, innovators value the extraction of monopoly rents from predecessors, and innovators regard their successes as temporary. We show that, if industry leaders have lower costs of research, then the leaders will do all the research in equilibrium. However, if the cost advantage is not too large, then the equilibrium research intensity and growth rate depend on the existence of the competitive fringe and take on the same values as in the standard solution. We discuss the departures from Pareto optimality and analyze the determination of the economy's rate of return and growth rate.

This paper explores the five simplest models of endogenous growth. We start with the AK model (Rebelo (1990)) and argue that all endogenous growth models can be viewed as variations or microfoundations of it. We then examine the Barro (1990) model of government spending and growth. Next we look at the Arrow-Sheshinskj-Romer model of learning by doing and externalities. The Lucas (1988) model of human capital accumulation is then considered. Finally, we present a simple model of R & D and growth.

The causal relationship between growth and inequality is complex, and there have been many scholarly works to study this relationship since the seminal work of Kuznets in the 1950s. Few recent studies in this field have shown that the nature of relationship is multifaceted and non-linear. In addition to the intrinsic non-linear nature of the relationship, government and institutions play pivotal role in distributing the benefits of growth to reduce inequality. The responsiveness greatly depends upon a country’s initial conditions in terms of inequality and the nature of democracy prevailing in the country. This volume highlights the role of institutions in explaining the gulf between inequality and growth, by applying a dynamic general equilibrium framework and

by utilizing econometric techniques. Econometrically two important hypotheses are tested. First, assuming there is no difference in institutions, the growth rate increases as inequality decreases. Second, assuming inequality remains unchanged, improvement in the integrity of fiscal institutions results in higher economic growth. Integrating theoretical and empirical approaches, this volume links crucial economic concepts in a novel way, and goes beyond academic analysis to suggest policy implications, and will serve as a valuable resource for scholars and policymakers alike in the fields of economic growth and development, public policy, and economic modeling.

The steady state and transitional dynamics of two-sector models of endogenous growth are analyzed in this paper. We describe necessary conditions for endogenous growth. The conditions allow us to reduce the dynamics of the solution to a system with one state-like and two control-like variables. We analyze the determinants of the long run growth rate. We use the Time-Elimination Method to analyze the transitional dynamics of the models. We find that there are transitions in real time if the point-in-time production possibility frontier is strictly concave, which occurs, for example, if the two production functions are different or if there are decreasing point-in-time returns in any of the sectors. We also show that if the models have a transition in real time, the models are globally saddle path stable. We find that the wealth or consumption smoothing effect tends to dominate the substitution or real wage effect so that the transition from relatively low levels of physical capital is carried over through high work effort rather than high savings. We develop some empirical implications. We show that the models predict conditional convergence in that, in a cross section, the growth rate is predicted to be negatively related to initial income but only after some measure of human capital is held constant. Thus, the models are consistent with existing empirical cross country evidence.

This book deals with Growth Theory, an important subject taught as a part of economic theory. Amongst other topics, it introduces the literature on growth and inequality as well as a major critique of growth economics by Charles Jones. These issues remained unaddressed in an earlier volume by the author, Growth Theory: Solow and His Modern Exponents (OUP 2005). Developed on the earlier work, the present volume focuses on: long run growth growth and infrastructure taxation policies for growth human capital formation a unified theoretical framework to help students travel from the world of old growth theory to modern growth theory intuitive as well as rigorous development of optimal control theory using undergraduate mathematical tools analysis of India's long term growth experience. For an interactive platform on updates and queries on the book and clarifications by the author, please visit the Discussion Forum: Modern Growth Theory, OUP, 2010 at this URL
http:--economicsteaching.wordpress.com-2010-10-28-modern-growth-theory-