

Increase in the production of goods and services – economic growth

[Economics](#)



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Economic growth From Wisped, the free encyclopedia This article needs additional citations for verification. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed. (April 2011) GAP real growth rates, 1990-1998 and 1990-2006, in selected countries. Rate of change of Gross domestic product, world and COED, since 1961 Economic growth caused the production-possibility frontier to shift outward. Economic growth is the increase in the amount of the goods and services produced by an economy over time.

It is conventionally measured as the percent rate of increase in real gross domestic product, or real GDP. [1] Growth is usually calculated in real terms - I. E. , inflation-adjusted terms - to eliminate the distorting effect of inflation on the price of goods produced. In economics, " economic growth" or " economic growth theory" typically refers to growth of potential output, I. E. , production at " full employment". As an area of study, economic growth is generally distinguished from development economics. The former is primarily the study of how countries can advance their economies.

The latter is the study of the economic aspects of the development process in low-income countries. See also Economic development. Since economic growth is measured as the annual percent change of gross domestic product (GDP), it has all the advantages and drawbacks of that measure. Contents [hide] 1 Definitions and history 1. 1 Economic growth versus the business cycle 1. 2 Historical sources of economic growth 1. 3 Economic growth per capita 1. 4 Measuring economic growth 1. 5 The power of annual growth 2 Theories of economic growth 2. 1 Classical growth theory 2. 2 The neoclassical growth model 2. 3 Salter cycle 2. 4 Endogenous growth theory 2. 5 Energy <https://assignbuster.com/increase-in-the-production-of-goods-and-services-economic-growth/>

and energy efficiency theories 2. 6 Unified growth theory . 7 The big push 2 8 Centenarians gar 3 Institutions and growth 4 Human capital and growth 5 Inequality and economic growth 5. 1 Evidence 6 Quality of life 7 Negative effects of economic growth 7. 1 Resource depletion 7. 2 Environmental impact 7. 3 Equitable growth 7. 4 Implications of global warming 8 See also 9 References 10 Further reading 11 External links 11. Articles and lectures 11. 2 Data Definitions and history [edit source | editable] Economic growth versus the business cycle [edit source | editable] Economists distinguish between short-run economic changes in production and long-run economic growth. Short-run variation in economic growth is termed the business cycle. The business cycle is made up of booms and drops in production that occur over a period of months or years. Generally, economists attribute the ups and downs in the business cycle to fluctuations in aggregate demand.

In contrast, the topic of economic growth is concerned with the long-run trend in production due to structural causes such as technological growth and factor accumulation. The business cycle moves up and down, creating fluctuations around the long-run trend in economic growth. Historical sources of economic growth [edit source | editable] Main article: Productivity improving technologies (historical) Economic growth has traditionally been attributed to the accumulation of human and physical capital, and increased productivity arising from technological innovation. 2] Economic growth was also the result of developing new products and services, which have been described as "demand creating" . [3] Before industrialization technological progress resulted in an increase in population, which was kept in check by food supply and other resources, which acted to limit per capita income, a <https://assignbuster.com/increase-in-the-production-of-goods-and-services-economic-growth/>

condition known as the Malthusian trap. 4] The rapid economic growth that occurred during the Industrial Revolution was remarkable because it was in excess of population growth, providing an escape from the Malthusian trap. 5] Countries that industrialized eventually saw their population growth slow, a condition called demographic transition. Increases in productivity are a major factor responsible for per capita economic growth - this has been especially evident since the mid-19th century. Most of the economic growth in the 20th century was due to reduced inputs of labor, materials, energy, and land per unit of economic output (less input per widget). The balance of growth has come from using more inputs overall because of the growth in output (more widgets or alternately more value added), including new kinds to goods and services (innovations). 6] During colonial times, what ultimately mattered for economic growth were the institutions and systems of government imported through colonization. There is a clear reversal of fortune between poor and wealthy countries, which is evident when comparing the method of colonialism in a region. Geography and endowments of natural resources are not the sole determinants of GAP. In fact, those blessed with good factor endowments experienced colonial extraction that provided only limited rapid growth - whereas colonized countries that were less fortunate in their original endowments experienced relative equality and demand for the rule of law.

These initially poor colonies end up developing an open franchise, equality, and broad public education, which helps them experience greater economic growth than the colonies that had exploited their economies of scale.

[citation needed] During the Industrial Revolution, mechanization began to

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replace hand methods in manufacturing, and new processes streamlined production of chemicals, iron, steel, and other products. [7] Machine tools made the economical production of metal parts possible, so that parts could be interchangeable. [8] See: Interchangeable parts.

During the Second Industrial Revolution, a major factor of productivity growth was the substitution of inanimate power for human and animal labor, to water and wind power with electrification and internal combustion. [7] Since that replacement, the great expansion of total power was driven by continuous improvements in energy conversion efficiency. [9] Other major historical sources of productivity were automation, transportation infrastructures (canals, railroads, and highways), [10][11] new materials (steel) and power, which includes steam and internal combustion engines and electricity.

Other productivity improvements included mechanized agriculture and scientific agriculture including chemical fertilizers and livestock and poultry management, and the Green Revolution. Interchangeable parts made with machine tools powered by electric motors evolved into mass production, which is universally used today. [8] Productivity lowered the cost of most items in terms of work time required to arches. Real food prices fell due to improvements in transportation and trade, mechanized agriculture, fertilizers, scientific farming and the Green Revolution.

Great sources of productivity improvement in the late 19th century were railroads, steam ships, horse-pulled reapers and combine harvesters, and steam-powered factories. [1] The invention of processes for making cheap
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steel were important for many forms of mechanization and transportation. By the late 19th century prices, as well as weekly work hours, fell because less labor, materials, and energy were required to produce and transport goods. However, real wages rose, allowing workers to improve their diet, buy consumer goods and afford better housing. [12] Mass production of the asses created overproduction, which was arguably one of several causes of the Great Depression of the asses. [14] Following the Great Depression, economic growth resumed, aided in part by demand for entirely new goods and services, such as telephones, radio, television, automobiles, and household appliances, air conditioning, and commercial aviation (after 1950), creating enough new demand to stabilize the work week. [15] The building to highway understructures also contributed to post World War II growth, as did capital investments in manufacturing and chemical industries.

The post World War II economy also benefited from the discovery of vast amounts of oil around the world, particularly in the Middle East. Economic growth in Western nations slowed down after 1973. In contrast growth in Asia has been strong since then, starting with Japan and spreading to Korea, China, the Indian subcontinent and other parts of Asia. In 1957 South Korea had a lower per capita GDP than Ghana, [16] and by 2008 it was 17 times as high as Ghana's. [17] The Japanese economic growth has slackened considerably since the late asses.

Economic growth per capita [edit source | editable] The concern about economic growth often focuses on the desire to improve a country's standard of living - the level of goods and services that, on average,

individuals purchase or otherwise gain access to. It should be noted that if the population grows along with economic production, increases in GAP do not necessarily result in an improvement in the standard of living. When the focus is on standard of living, economic growth is expressed on a per capita basis.

A high savings rate is also linked to the standard of living. Increased saving, in the long run, leads to a permanently higher output (income) per capita, as capital accumulation per individual also increases. [citation needed]

Measuring economic growth[edit source | editable] Question book-new. SVGA

This section does not cite any references or sources. Please help improve this section removed. (March 2013) Economic growth is measured as a percentage change in the Gross Domestic Product (GDP) or Gross National Product (GNP).

These two measures, which are calculated slightly differently, total the amounts paid for the goods and services that a country produced. As an example of measuring economic growth, a country that creates \$9,000,000,000 in goods and services in 2010 and then creates \$9,090,000,000 in 2011, has a nominal economic growth rate of 1% for 2011. To compare per capita economic growth among countries, the total sales of the respected countries may be quoted in a single currency.

This requires converting the value of currencies of various countries into a selected currency, for example U. S. Dollars. One way to do this conversion is to rely on exchange rates among currencies, for example how many Mexican pesos buy a single U. S. Dollar? Another approach is to use the <https://assignbuster.com/increase-in-the-production-of-goods-and-services-economic-growth/>

purchasing power parity method. This method is based on how much consumers must pay for the same "basket of goods" in each country. Inflation or deflation can make it difficult to measure economic growth.

If GDP, for example, goes up in a country by 1% in a year, was this due solely to rising prices (inflation), or because more goods and services were produced and saved? To express real growth rather than changes in prices for the same goods, statistics on economic growth are often adjusted for inflation or deflation. For example, a table may show changes in GDP in the period from 1990 to 2000, as expressed in 1990 U. S. Dollars. This means that the single currency being used is the U. S. Dollar with the purchasing power it had in the U. S. in 1990.

The table might mention that the figures are "inflation-adjusted" or real. If no adjustment were made for inflation, the table might make no mention to inflation-adjusted students or might mention that the prices are nominal. The power of annual growth [edit source | editable] Over long periods of time even small rates of growth, like a 2% annual increase, have large effects. For example, the United Kingdom experienced a 1.97% average annual increase in its inflation-adjusted GDP between 1830 and 2008. [18] In 1830, the GDP was 41,373 million pounds.

It grew to 1.37 billion pounds by 2008. (Figures are adjusted for inflation and stated in 2005 values for the pound.) A growth rate that averaged 1.97% over 178 years resulted in a 32-fold increase in GDP by 2008. The large impact of a relatively small growth rate over a long period of time is due to the power of compounding (also see exponential growth). A growth rate of 2.

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5% per annum leads to a doubling of the GDP within 29 years, whilst a growth rate of 8% per annum (an average exceeded by China between 2000 and 2010) leads to a doubling of GDP within 10 years.

Thus, a small difference in economic growth rates between countries can result in very different standards of living for their populations if this small difference continues for many years. Theories of economic growth [edit source | editable] Classical growth theory [edit source | editable] Adam Smith wrote *The Wealth of Nations* The modern conception of economic growth began with the critique of Mercantilism, especially by the physiographic and with the Scottish Enlightenment thinkers such as David Hume and Adam Smith, and the foundation of the discipline of modern lattice economy.

Adam Smith noted the huge gains in productivity achieved by the division of labor in the famous example of the pin factory. [19] David Ricardo argues that trade benefits a country, because if one can buy an imported good more cheaply, it means there is more profitable work to be done here. This theory of comparative advantage would be the central basis for arguments in favor of free trade as an essential component of growth. [20] The neoclassical growth model [edit source | The notion of growth as increased stocks of capital goods was codified as the Slow-

Swan Growth Model, which involved a series of equations that showed the relationship between labor-time, capital goods, output, and investment.

According to this view, the role of technological change became crucial, even more important than the accumulation of capital. This model, developed by Robert Solow [21] and Trevor Swan [22] in the 1950s, was the first attempt to

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model long-run growth analytically. This model assumes that countries use their resources efficiently and that there are diminishing returns to capital and labor increases.

From these two premises, the neoclassical model makes three important predictions. First, increasing capital relative to labor creates economic growth, since people can be more productive given more capital. Second, poor countries with less capital per person grow faster because each investment in capital produces a higher return than rich countries with ample capital. Third, because of diminishing returns to capital, economies eventually reach a point where any increase in capital no longer creates economic growth. This point is called a steady state.

The model also notes that countries can overcome this steady state and continue growing by inventing new technology. In the long run, output per capita depends on the rate of saving, but the rate of output growth should be equal for any saving rate. In this model, the process by which countries continue growing despite the diminishing returns is "exogenous" and represents the creation of new technology that allows production with fewer resources. Technology improves, the steady state level of capital increases, and the country invests and grows.

The data does not support some of this model's predictions, in particular, that all countries grow at the same rate in the long run, or that poorer countries should grow faster until they reach their steady state. Also, the data suggests the world has slowly increased its rate of growth. Salter cycle[edit source | editable] According to the Salter cycle, economic growth

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is enabled by increases in productivity, which lowers the inputs (labor, capital, material, energy, etc.) for a given amount of product (output). 23] Lowered cost increases demand for goods and services, which also results in capital investment to increase capacity. New capacity is more efficient because of new technology, improved methods and economies of scale. This leads to further price reductions, which further increases demand, until arrest become saturated due to diminishing marginal Endogenous growth theory[edit source | editable] Main article: Endogenous growth theory World map of the 2008-2009 Global Competitiveness Index. Growth theory advanced again with theories of economist Paul Romer and Robert Lucas, Jr. In the late 1980s and early 1990s. Unsatisfied with Solow's explanation, economists worked to " endogenous" technology in the 1980s. They developed the endogenous growth theory that includes a mathematical explanation of technological advancement. [26][27] This model also incorporated a new concept of human capital, the skills and knowledge that make workers productive. Unlike physical capital, human capital has increasing rates of return. Therefore, overall there are constant returns to capital, and economies never reach a steady state.

Growth does not slow as capital accumulates, but the rate of growth depends on the types of capital a country invests in. Research done in this area has focused on what increases human capital (e. G. Education) or technological change (e. G. Innovation). [28] Energy and energy efficiency theories[edit source | editable] The importance of energy to economic growth was emphasized by William Stanley Sevens in The Coal Question in which he described the rebound effect based on the observation that

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increasing energy efficiency resulted in more use of energy. See: Sevens paradox) In the asses, the economists Daniel Shampoo and Leonard Brooked independently put forward ideas about energy consumption and behavior that argue that increased energy efficiency paradoxically tends to lead to increased energy consumption. In 1992, the US economist Harry Saunders dubbed this hypothesis the Shampoo-Brooked postulate, and showed that it was true under neo-classical growth theory over a wide angel of assumptions. 29] The importance of electricity to economic growth has been recognized by economists, prominent businessmen,[30] economic historians[31] and various engineering, technical andscienceorganizations[32 and government agencies. Conclusions of a report prepared for Los Alamos National Laboratory for the United States Department of Energy and the National Academy of Sciences stated: " Electricity use and gross national product have been, and probably will be, strongly correlated" . [33] The report's conclusion went on to say that the energy intensity of the U.

S. Economy (electricity consumed per dollar of GAP) had been declining for a number of years. All approaches to the inclusion energy into the theory of production are known as the energy theory of value, which, nevertheless, does not have an accurate and complete formulation. For example, Ares and War have presented a model that aims to address deficiencies in the neo-classical and endogenous growth models. It claims that physical and chemical work performed by energy, or more correctly Gerry, has historically been a very important driver of economic growth. 9] [34] Key support for this theory is a mathematical model wowing that the efficiency of a composite

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indicator using electrical generation and other energy efficiencies is a good proxy for the Slow residual, or technological progress, that is, the portion of economic growth that is not attributable to capital or The proper role of energy in production processes was elucidated by the technological theory of social production. Energy growth theory economists have criticized orthodox economics for neglecting the role of energy and natural resources.

Ares and War's model relates the slowing of economic growth to energy inversion efficiencies approaching thermodynamic limits, and cautions that declining resource quality could bring an end to economic growth in a few decades. [37] Hall et al. 2001 state: " Although the first and second laws of thermodynamics are the most thoroughly tested and validated laws of nature the basic neoclassical economic model is a perpetual motion machine, with no required inputs or limits. [38] Unified growth theory[edit source | editable] Unified growth theory was developed by Owed Gallo and his co-authors to address the inability of endogenous growth theory to explain key empirical regularities in the Roth processes of individual economies and the world economy as a whole. Endogenous growth theory was satisfied with accounting for empirical regularities in the growth process of developed economies over the last hundred years.

As a consequence, it was not able to explain the qualitatively different empirical regularities that characterized the growth process over longer time horizons in both developed and less developed economies. Unified growth theories are endogenous growth theories that are consistent with the entire process of development, and in reticular the transition from the epoch of

Malthusian stagnation that had characterized most of the process of development to the contemporary era of sustained economic growth. 39]

The big push[edit source | editable] In theories of economic growth, the mechanisms that let it take place and its main determinants are abundant. One popular theory in the asses, for example, was that of the Big Push, which suggested that countries needed to Jump from one stage of development to another through a virtuous cycle, in which large investments in infrastructure and education coupled with private investments would move the Economy to a more productive stage, breaking free from economic paradigms appropriate to a lower productivity stage. 40] Centenarians growth[edit source | Centenarians growth is an economic theory named after the 20th-century Austrian economist Joseph Schumacher. Unlike other economic growth theories, his approach explains growth by innovation as a process of creative destruction that captures the dual nature of technological progress: in terms of creation, entrepreneurs introduce new products or processes in the hope that they will enjoy temporary monopoly-like profits as they capture markets. In doing so, they make old technologies or products obsolete.

This is the destruction[disambiguation needed] referred to by Schumacher, which could also be referred to as the annulment of previous technologies, which makes them obsolete, and "... Destroys the rents generated by previous innovations. " (Action 855)[41] A major model that illustrates Centenarians growth is the Action-Hewitt model. [42] Institutions and growth[edit source | editable] According to Guacamole, Simon Johnson and

James Robinson, the positive correlation between high income and cold climate is a by-product of history.

Europeans adopted very different colonization policies in different colonies, with different associated institutions. In places where these colonizers faced high mortality rates (e. G. , due to the presence of tropical diseases), they could not settle permanently, and they were thus more likely to establish extractive institutions, which persisted after independence; in places where they could settle permanently (e. G. Those with temperate climates), they established institutions with this objective in mind and modeled them after those in their European homelands.

In these 'neo-Europe' other institutions in turn produced better development outcomes. Thus, although other economists focus on the identity or type of legal system of the colonizers to explain institutions, these authors look at the environmental conditions in the colonies to explain institutions. For instance, former colonies have inherited corrupt governments and geopolitical boundaries (set by the colonizers) that are not properly placed regarding the geographical locations of different ethnic groups, creating internal disputes and conflicts that hinder development.

In another example, societies that emerged in colonies without solid native populations established better property rights and incentives for long-term investment than those where native populations were large. [43] Human capital and growth[edit source | editable] One ubiquitous element of both theoretical and empirical analyses of economic growth is the role of human capital. The skills of the population enter into both neoclassical and

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endogenous growth models. [44] The most commonly used measure of human capital is the level of school attainment in a country, building upon the data development of Robert Barron and Gong-Who Lee. [45] This measure of human UAPITA, however, requires the strong assumption that what is learned in a year of schooling is the same across all countries. It also presumes that human capital is only developed in formal schooling, contrary to the extensive evidence that families, neighborhoods, peers, and health also contribute to the development of human capital. To measure human capital more accurately, Eric Handshake and Dennis Kim introduced measures of mathematics and science skills from international assessments into growth analysis. [46] They found that quality of human capital was very significantly related to economic growth. This approach has been extended by a variety of authors, and the evidence indicates that economic growth is very closely related to the cognitive skills of the population. [47] Inequality and economic growth [edit source | editable] Percentage changes in GDP growth spell length as each factor moves from 50th to 60th percentile and all other factors are held constant. Income distribution is measured by the Gini coefficient. Political institutions are measured by the Polity IV Project scale.

Exchange rate competitiveness is measured by rate deviation from purchasing power parity adjusted for per capita income. [48] Initial [when?] theories incorrectly stated that inequality had a positive effect on economic development. The marginal propensity to save was thought [who?] to increase with wealth and inequality increases savings and capital accumulation. [49] However, it was [who?] determined much later [when?] that the analysis based on comparing yearly equality fugues to yearly growth

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rates was flawed and misleading because it takes several years for the effects of equality changes to manifest in economic growth changes. 48] The credit market imperfection approach, developed by Gallo and Zaire (1993), monstrence that inequality in the presence of credit market imperfections has a long lasting detrimental effect on human capital formation and economic development. [50] The political economy approach, developed by Elysian and Radio (1994) and Person and Tableland (1994), argues that inequality is harmful for economic development because inequality generates a pressure to adopt redistributive policies that have an adverse effect on investment and economic growth. 51] Evidence[edit source | editable] A study by Operator (1996) examines of the channels through which inequality may affect economic growth. He shows that in accordance with the credit market imperfection approach, inequality is associated with lower level of human capital formation (education, experience, apprenticeship) and higher level of fertility, while lower level of human capital is associated with lower growth and lower levels of economic growth. In contrast, his examination of the political economy channel refutes the political economy mechanism. He demonstrates that inequality is associated with lower levels of taxation, while lower levels of taxation, contrary to the theories, are associated with lower level of economic growth[52] A 2011 note for the International Monetary Fund by Andrew G. Berg and Jonathan D. Story found a strong association between lower levels of inequality in developing countries and sustained periods of economic growth.

Developing countries with high inequality have " succeeded in initiating growth at high rates for a few years" but " longer growth spells are robustly associated with more equality in the income distribution. "[53] Disputing the claim of a Washington Post editorialist that " Western Rupee's recent history suggests that flat income distribution accompanies flat economic growth," urinals Timothy Noah, points out that redistribution policies in Europe do not seem correlated to economic problems of the late twenty-ought.