Globalization 2.0

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Editors

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A Roadmap to the Future from Leading Minds

Springer

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Preface

. . . Eat not up your property among yourselves unjustly except it be a trade amongst you, by mutual consent . . . and help you one another in righteousness and piety. . .

(Al-Hadid 4:29; Al-Ma'idah 5:2)

There cannot be any doubt that the current financial crisis, which began in the US, has gone global. This realization has fuelled the fire of debate over globalization. Today's globalization is no longer the globalization that Theodore Levitt, a former professor at the Harvard Business School, described in 1983 in his world famous article "The Globalization of Markets." Although, in old days, Levitt and his successors had not seen globalization as an utopian state free of problems, nowadays globalization has been reshaped completely. Therefore, in the perception of the editors it is justified to use the phrase "Globalisation 2.0" for the range of effects interpenetrating global economic arrangements. Globalisation 1.0 will never be restored again. Since the subprime crisis made its way to the global arena in the year 2008, companies and managers are confronted with the breathtaking speed of global, regional, and local changes. It is more than a provocation to divide developments into cause and effects. Forecasts in strategic management are no longer valid even for the moment they are published. Uncertainty occupies the driving seats in global, regional, and local oriented companies.

How to cope with this?

> The global crisis we are facing right now is unprecedented in its origin and communication intensity. Action must be taken but on the other hand overreaction can be detrimental. I am of the opinion that against all confusion, complexity and misjudgement, common sense and standard business principles may work best in the absence of a proven recipe, we all know there is no business without a risk anyway. However we need to apply a new consciousness in risk assessment.

Burckhard Schneider (President & CEO) Interturbine Group of Companies

Often global cooperation and trust between companies become both a blessing and a curse in short order. Yesterday's winners become today's losers – will they be gone tomorrow? In this harrowing scenario, managers all over the world crave orientation. Managers are called upon to do something that ensures viability. But

there are no simple recipes. Addressing the problems presented by Globalisation 2.0 requires expertise – the kind of expertise associated with vision and implementation power. Management decisions have large distributive consequences for all shareholders of the company. They could accelerate or slow down crisis at a global and an individual level. Therefore, managers need to be sensitive and should give immediate consideration to reforming their strategies and market plans.

Against this background the nineteen articles in this book try to encourage managers in every country and any industry to find their own robust way to overcome the drawbacks of Globalisation 2.0 and to benefit from global change. In an age where the Internet rules, splendid isolation is no durable alternative to Globalisation 2.0. For this reason, we showcase how leading managers from e.g. the automotive, aviation, energy, telecommunication, and media industries, as well as the fields of politics, logistics, consulting, and headhunting perceive the current crises and the future of globalization. We offer trendsetting answers, solutions and a roadmap for the roadblocks facing future economic growth disclosed by leading minds from world-leading companies.

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Globalizing Action on Climate Change

Dieter Ammer

Dieter Ammer, born in 1950, is a qualified political economist, skilled auditor and co-founder of Conergy AG. After his training, which was internationally orientated, he has held numerous top management positions within the German economy. Born in Bremen, Ammer has held the positions of chairman of the board of Zucker AG and chairman of the management board of the Beck & CO brewery as well as chairman of the board of Tchibo Holding AG in Hamburg.

Introduction

Globalization! A new word – a process as old as the wheel. Ever since concepts of organized agriculture first began emanating from the Middle East 80,000 years ago, borne by traders on the world's first carts, new ideas have sprung up across the planet, and over time become globalized. There has been Christianity and Islam, mathematics and science, trade and colonialism, industrialization, democracy and globalization itself. This has been a constant process throughout history, with both positive and ill effects, and as the world faces up to perhaps its first truly global challenge – that of climate change – it remains to be seen how this increasingly interdependent world will respond. Global greenhouse gas emissions rose 70% from 1970 to 2004 (IPCC 2007a), of which there has been a 25% increase since 1990 (IEA 2006). The effects now appear obvious to even the ordinary citizen: 11 of the warmest years since 1850 occurred between 1995 and 2004, glaciers are in retreat, there are increased drought and storm events (IPCC 2007a). Despite the warning signs, the rate of emission increase has actually accelerated since 2000, with 74% of the growth coming from booming emerging markets (Field 2007). Globalization has made its contribution: one study found that 23% of China's greenhouse gas emissions were emitted producing product for western consumption (Tyndall 2007), with the rest coming from changing land use and rapidly rising domestic energy consumption by the country's burgeoning urban population – itself a product of this export-led boom. Wealth transfer is one of the great benefits of Globalization, and we cannot begrudge

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the extraordinary rise of these economies. But we must all recognize that Globalization means emissions can be exported, something that now requires action beyond the traditional industrial powers who signed the Kyoto Protocol.

All eyes will be on Copenhagen this December when the parties to the UN Framework Convention on Climate Change aim to negotiate a treaty to replace Kyoto. Negotiations are already underway to expand the scope and power of a new agreement, which, given the capital expenditure requirements and competitive issues surrounding emissions reduction, is essential for genuine progress to be made in fighting emissions globally. While a new administration in the White House augurs well, current uncertainties surrounding the global economy will ensure national governments fight tooth and nail to protect their interests. This is to be expected.

Reducing emissions sounds easy on paper but the ramifications of action for individual countries vary tremendously. Just as some regions of the world benefit from large resources of hydrocarbons – Ghana is the latest country to have discovered a large oil field – some have excess renewable power capacities – Brazil with ethanol, Iceland with geothermal, Southern Europe and North Africa with solar, and Argentina and Scotland with wind, tidal and wave. Some countries have large carbon sinks, such as forests or lakes that can soak up carbon dioxide, while others, particularly in the West, are more amenable to emissions controls, having de-industrialized. Closely linked to these national characteristics are Globalization's trade flows – Asian wealth has grown considerably through the export of low-cost goods to the west, and it is uncertain how attaching a premium to carbon-emitting goods and services will affect their economies. Equally, while the West's companies could be expected to benefit from stricter global controls on the manufacture of and energy efficiency of goods, the lifestyles of their large, wealthy populations could be impacted by higher costs of more advanced goods and services.

More important, across national borders, some regions of the world are expected to be more greatly affected by climate change than others: less developed low-lying areas such as the Pacific Islands and Asian megadeltas will be most severely threatened by rising sea levels, Africa will suffer most from water stress and reduced farmland, and East, South and South-east Asia most by disease from drought and flooding (IPCC 2007b). Some regions may in fact benefit for a time from increased crop yields, though long-term, overall effects are expected to be negative. Copenhagen will be a delicate balancing act, and one that could conceivably impact the balance of power in the world for decades to come. So should it be. The world has quietly moved towards a consensus of restricting global warming to two degrees above pre-industrial levels. This has occurred, not because of the will of one nation or a single interest group over another – but simply, because it is right. The French writer Michel Houllebecq described changes in the way people think as follows: 'Once a metaphysical mutation has arisen, it moves inexorably towards its logical conclusion. Heedlessly, it sweeps away economic and political systems, ethical considerations and social structures. No human agency can halt its progress – nothing, but another metaphysical mutation'. (Houllebecq 2000) It is my belief that the world is experiencing one such "metaphysical mutation." It is no longer seen as

acceptable for a man or woman to power his or her home using hydrocarbon-fired electricity, so that a South Sea Island fisherman must abandon his flooded village.

It is no longer acceptable, because he or she has a choice. The sun and the wind are free and abundant. They know no national barriers or trade agreements. As such, they are perhaps the most powerful globalizing force in the battle against climate change. Far-sighted individuals and companies have already made strides to enable mankind to reduce emissions today. In the power sector, there are ever more efficient wind turbines and solar panels, tidal and wave power. In transport, there are more efficient fuels, combustion and hybrid engines, and better management of transport logistics, such as ships lowering engine speeds. In the home, CHP and better insulation, efficient air conditioning and energy-saving appliances are becoming more affordable. Industry is inventing new processes – developing new biotech-based plastics, carbon capture and storage facilities, electric batteries, fuel cells and second-generation biofuels. Energy systems analysts are reviewing the designs of creaking, inefficient national grids, and planning new distributed energy architectures, while urban planners are considering environmental effects in new housing and public transport projects. The 'metaphysical mutation' is already taking place and President Obama's vision of the 'green collar' worker may well lead the world out of recession.

It is my belief that decarbonization of the global economy is not only possible, but will occur, simply because it is desirable for the vast majority of the citizens of the world. The global economy will swallow the five to six percent of annual global capital expenditure estimated by McKinsey (McKinsey 2008) to maintain global warming at two degrees – money that would likely otherwise be spent on renovating our existing energy infrastructure. Just as emerging markets are building the coal-fired power stations that fuelled industrialization in the west a hundred years ago, over the coming years, the developed economies will design the wind turbines, the solar cells and concentrated solar power plants, the CHP units and electric cars, to power responsible consumption in the century to come. As Sheikh Yamani once said, the Stone Age did not end because of a lack of stones, nor the Bronze Age because of a lack of bronze. So too, the hydrocarbon economy will not end because of a lack of fossil fuels, but because of the gradual globalization of superior, alternative technologies. This century, Globalization will ensure new technologies and new brands are attractive the world over, and transfer to the world's emerging markets. Lower emissions and climate change abatement will thus be secured not only through the will of decision makers at Copenhagen this winter, but as an unintended benefit of twenty-first century consumption.

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Globalization and Growth: A Macroeconomic Perspective

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Effects of Globalization

The increasing trade liberalization between nations and the rising degree of openness of national economies are often branded with the term "Globalization". In many economies, gains from specialization and trade advantages have arisen as a result of this process. Due to different factor endowments and production possibilities, national economies produce a variety of goods at different relative costs.

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An exchange of these goods can be beneficial for both the participating economies (trade advantage).

Furthermore, economies can also specialize in the production of the goods for which they have a comparative production advantage (specialization advantage). Both effects lead to a higher level of overall welfare. However, there are winners and losers when it comes to globalization. According to the Samuelson–Stolper Theory, with their given factor endowments, an economy specializes in the production of those goods that require for their manufacture the factors which the country possesses in relative abundance. Economies with comparatively high capital resources specialize in capital-intensive goods, those with comparatively high labour resources in labour-intensive goods. This has implications for the functional distribution of income: in the country that specializes in capital-intensive goods, the capital income will increase and the labour income will decrease; in the land where the labour-intensive goods are produced, the labour income will rise and the capital income will fall. Similar effects result for high- and low-skilled workers. Here, a reallocation of the factors of production due to globalization can likewise cause a redistribution of factor income. In the industrialized nations, high-skilled workers, relatively strongly represented in these countries, also profit from migration movements, while low-skilled workers are poorly positioned.

It has often been said that lower social standards have resulted due to a mix of these processes and a competition-induced "race to the bottom". Indeed, workers in emerging nations are more willing to accept lower wages and social security than in the industrialized countries. But this "race to the bottom" is less a consequence of globalization than a catching-up process for developing and emerging countries. As soon as a higher income level has been reached, social standards will increase and costs of adjusting will increasingly move from the industrial nations to the others. With increasingly deregulated capital markets and with exchange rate regimes turning from fixed to more flexible rates, capital flows have become more and more global, leading to a marked increase in capital mobility.

Cross-border capital movements have significantly increased in importance, by far surpassing the value of commodities trade. It has often been put forward that this is proof of the dominance of the capital markets over the commodities markets, destabilizing them. In fact, it is not only trade in commodities that is being mirrored on the international capital and foreign-exchange markets, but also expectations and risks being dealt with. Capital has moved especially to regions where there was little, and so generated high yields. Above all, this has happened in the so-called emerging markets. The process not only affects the level and direction of net capital flows, but also the total amount of worldwide capital movements (see Table 1).

To an extent, contrary to the capital exports in the emerging markets, there has been a slowdown in the increase of capital stocks in the industrial countries. In the Euro Zone, the average yearly growth rate for capital stocks slowed from 4.8% during the period from 1960 to 1974 to 2.3% between 1980 and 2003 (see Table 2). Moreover, not only the growth rate of Gross Domestic Product, but also the

Table 1 Private capital flows in emerging markets[a], in Billion $US

	1980–1989	1990–1999	2000–2007	2006	2007[c]
Gross inflow of which	15.6	173.8	542.6	902.4	1,440.2
FDI	12.2	102.2	267.3	354.4	530.3
Gross outflow of which	14.5	86.4	409.7	769.0	1,001.3
FDI	2.6	24.6	115.6	216.0	261.6
Net flow[b]	1.1	87.4	132.8	133.5	438.8
Current account balance	−16.4	−23.3	244.1	451.0	542.7
Increase in reserves	11.6	61.9	364.6	515.2	940.4

Source: Turner 2008

[a]Argentina Brazil, Chile, China, Columbine, Czech Republic, Hungary, Hong Kong, India, Indonesia, Korea, Malaysia, Mexico, Peru, die Philippines, Poland, Russia, South Africa, Taiwan, Thailand, die Turkey und Venezuela

[b]with exception of official capital flows

[c]preliminary

Table 2 Average yearly growth rate for gross domestic product and the input factors, in %

	1960–2003	Structural breaks	Before break	Between breaks	After break
Real GDP	3.1	1973	5.1	–	2.2
TFP	1.6	1973	3.2	–	1.0
Labour input	0.5	–	–	–	–
Capital input	3.2	1974, 1980	4.8	3.3	

Source: ECB 2005

contribution to growth by capital was significantly higher in Eastern Europe than in "old" Europe in the past decade (Burda and Severgnini 2008). The same applies to technological advancement, which is measured as an increase in the "Total Factor Productivity" (TFP).

It can be shown that free capital flows lead to an increase in welfare even though capital accumulation, and therefore growth in industrial countries declines in the course of the opening for capital movements (see Fig. 1).

Capital is most productive in places where it is relatively the scarcest. Such places are where the available capital per head of workforce is at the lowest. Figure 1 illustrates the welfare effect of capital movements: without capital mobility there are high interest rates abroad (r_0^A left axis) and low domestic interest rates (r_0^D. right axis). Capital flows from outside into a country after the opening of the border for capital mobility. In the process, interest rates fall abroad while it rises domestically. This process continues until the domestic interest matches the interest rates abroad (r_1). A net-welfare increase arises for both countries corresponding to the level of the blue-shaded area. Despite the increasing significance of international capital flows, the independence between investment and savings has not been given so far. Empirically, we see a home bias concerning domestic investment, which is known as the Feldstein–Horioka Puzzle (see Feldstein and Horioka 1980). This implies that investors pass up higher returns internationally in preference for domestic investments. A rationale for the observation that savings primarily finance domestic investments could lie

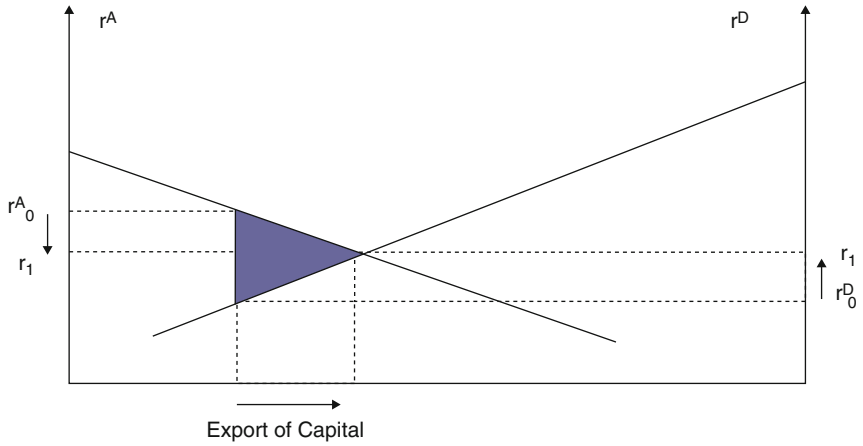

Fig. 1 Marginal productivity and capital flows
source: HWWI

in the better knowledge of domestic markets. Another one may be that domestic savings are correlated to other domestic wealth-building strategies, particularly human capital, for example. This is particularly important in the Asian economies, in which the savings rates as well as the portion of income spent on education are very high. International capital movements have to be further differentiated into direct investment and portfolio investment. While portfolio investments typically have a short term and, therefore, are much more volatile, most of the time there is a longer-term motivation behind direct investment. Alongside the longer-term capital exports, particularly with foreign direct investment, it is often the case that capital-linked technological advancement, management knowledge and know-how, etc. are also transferred. Increasing international competition, furthermore, leads to dynamic efficiency gains. Competition takes place not only in the markets, but also between production locations.

Developments and Perspectives

World production has increased by about six times since 1960 (see Fig. 2). Asia in particular has registered high growth. The reasons for this dynamic development are diverse and, to a great extent, interdependent. On the one hand, developing and emerging countries are demonstrating a more significant catch-up process compared to industrialized countries. This is strengthened through trade and specialization advantage as a result of increasing trade liberalization and the opening of economies. Technological advances arise and are spread faster due to free capital flows and new information technologies. The high economic growth in Asia is due to high domestic savings and capital imports, which led to high capital

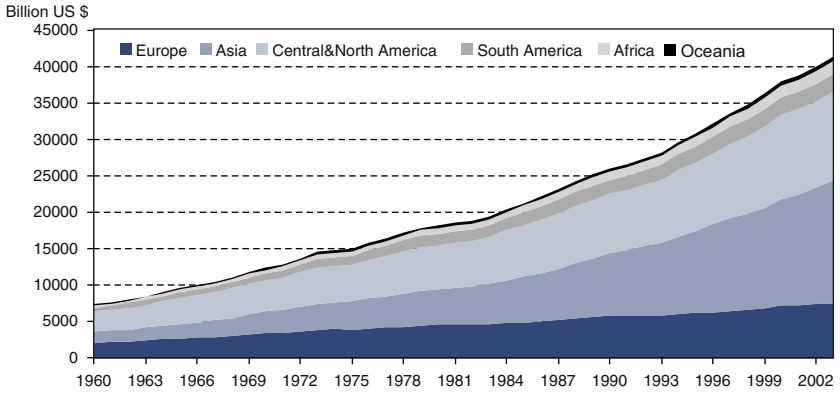

Fig. 2 Development of world production in real terms
Source: Penn World Tables 6.2, 2006

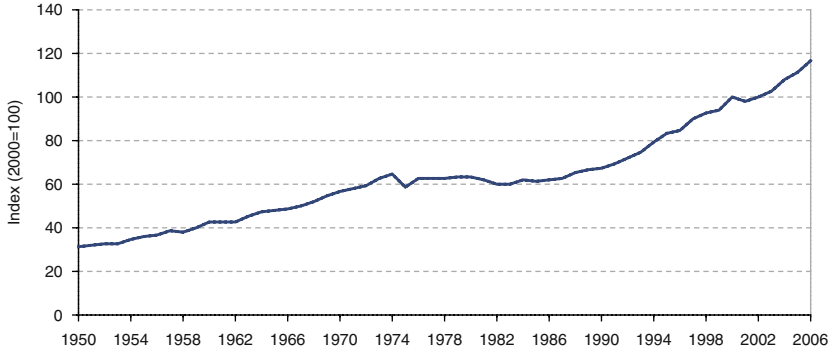

Fig. 3 Development of world trade
Source: IMF 2009

accumulation. This development was interrupted temporarily when the Asian crisis hit in 1997.

The crisis was caused by scarce foreign currency reserves, fixed exchange rates and a weak domestic banking system. After steps towards monetary and currency policy stability were undertaken, the dynamic growth process was resumed again, continuing at a nearly unchanged rate.

On the one hand, the similarly strongly increasing rate of international trade can be seen as a result, partly also as a cause, of world economic expansion. Besides structural adjustments, economic growth of given regions is a central determinant of the trade between those regions. And so, analogous to the strongly rising world economic production since the 1990s, world trade has also increased; it has nearly doubled since 1985 (see Fig. 3).

In addition to the growth-driven effect on trade since 1985, trade liberalization and the opening of many economies have led to a structural change. In so doing,

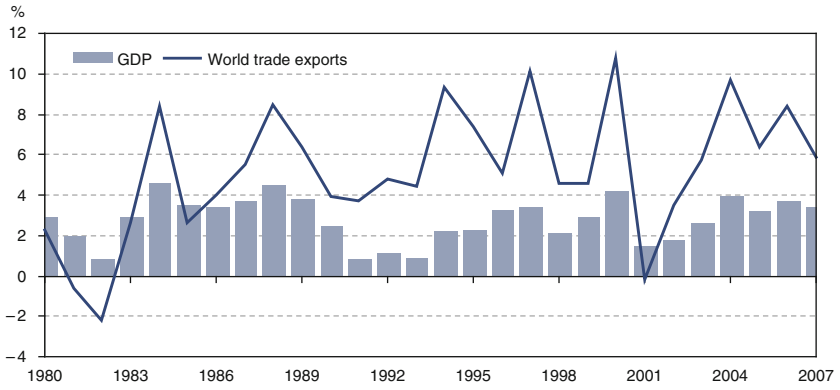

Fig. 4 Growth rates of world trade and world production
Source: IMF 2009

Table 3 Bilateral trade growth per year until 2030, in %

	Latin America	South Asia	East Asia & Pacific	Sub – Sahara	Near East & North Africa	Transformation countries	Industrialized countries
Latin America	8.5	9.7	10.5	8.7	8.0	8.1	7.2
South Asia		10.9	11.8	9.9	9.2	9.3	8.4
East Asia & Pacific			12.6	10.7	10.1	10.1	9.2
Sub – Sahara				8.9	8.2	8.3	7.4
Near East & North Africa					7.6	7.6	6.7
Transformation countries						7.7	6.8
Industrialized countries							5.7

Source: HWWI 2008

they overlay and strengthen each other. This is why the growth rate of world trade is, as a rule, higher than the growth rate of world production (see Fig. 4). However, it is important to notice that world trade shows more volatility than production. World trade falls more than production in crises, but also recovers more quickly and is able to grow at a disproportionately high rate in boom-times.

According to the HWWI forecast, the bilateral trade between the regions will continue to increase strongly until 2030 (see Table 3). The trade outlook is based on the growth forecast for the region as well as its trade structure as the most important determinants for bilateral trade. Due to the strong growth in the region, trade with Asia will see the highest growth rates in all regions.

The current financial and economic crisis will not fundamentally change this forecast. Although a deep, but temporary, slump in world economic expansion will

take place, in the long term the most important economies are expected to return to the "old" growth trend. A simulation of the current financial and economic crisis has shown that, although this temporary setback in growth will create a "plateau" effect (a slight one, in the long term), world economic expansion will resume at about the same level. Figure 6 shows a simulation where it is assumed that the growth rate for world production in 2009 and 2010 shrinks by 3.5 and 2.0 percentage points, respectively. Then the growth of world production resumes at a rate of 4.1%. This rate represents the average rate since 2000. Obviously, this simulation presents a very stylized and simplified picture of the current financial and economic crisis. The actual development will certainly differ from that which is assumed here. The actual development is dependent upon how the crisis is dealt with in the various regions of the world. There is reason to believe that the industrialized nations will suffer from this crisis much longer than the two years assumed here. As a result, the growth rate would be below the long-term average for a longer time. On the other hand, past crises have shown that catch-up processes have accelerated growth afterwards. As long as this was the case, the long-term growth trend would be reached sooner. A meaningful interpretation of Fig. 5 is, however, that growth interrupted for 2 or 3 years is relatively insignificant for development over decades.

The future growth trend on the supply side and the demand side will be determined by the demographic development. Population growth drives the development of demand, the need for infrastructure and the supply of labour. Figure 6 shows the world population growth according to the UN forecast. Accordingly, the world population will increase to more than nine billion by 2050.

Alongside population, technological progress and investment in physical and human capital are the driving forces for growth. These lead to an increase in productivity and so to higher per-capita income in the future. Innovation and growth will primarily be driven by science and research-intensive industries in

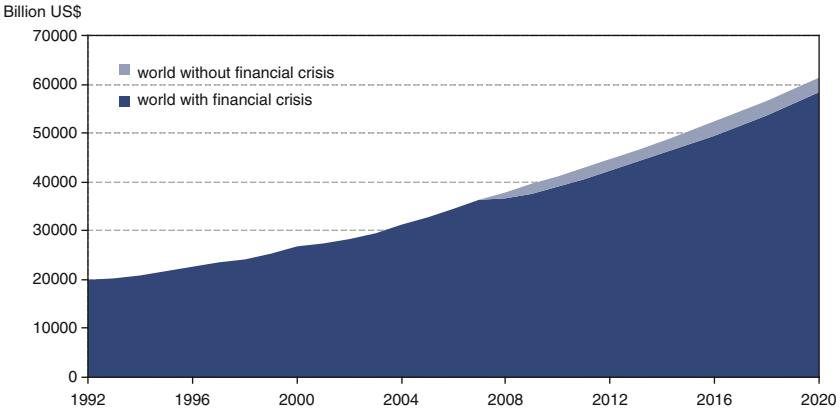

Fig. 5 Expansion trend with and without financial crisis, in billion US-Dollar. Assumptions: Growth Rate: 4.1% p.a.; with Financial Crisis: -3.5 percentage points in 2009 and –2.0 in 2010
Source: HWWI Calculations

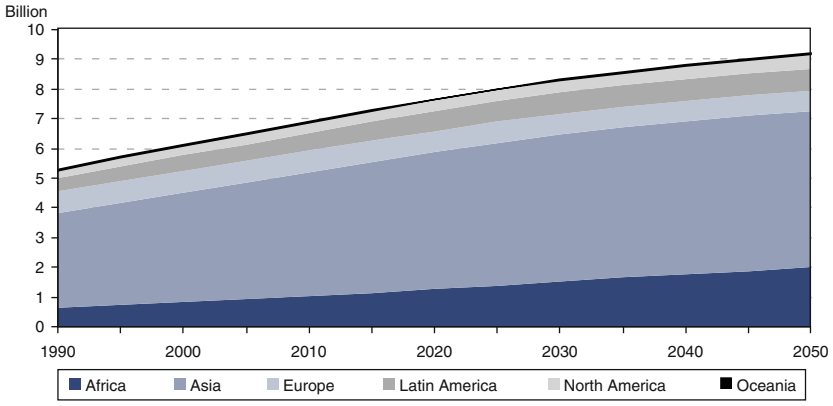

Fig. 6 Growth of world population by region
Source: UN population projection 2009

future (see Barro and Sala-i-Martin (1995), e.g. for the Endogenous Growth Theory). Nanotechnology, biotechnology and genetic engineering could provide basis innovation, which leads to boosts in growth, particularly in the fields of climate, energy, and health as well as mobility, transport and logistics. Simultaneously, a high potential for demand arises in precisely these fields in light of population growth and increasing per-capita income.

Goods, Capital and Asset Markets

Goods, capital and asset markets are directly related. Income can either be saved or spent. Savings signify wealth accumulation. Individually, the wealth accumulation can take the form of higher real capital stocks or monetary assets. However, economy-wide wealth accumulation can take place only with investment or with capital exports abroad. In this way the investments increase the capital stock, and the capital export increases the net current account position towards other countries. In the past, considerable amounts of tangible assets as well as monetary assets were accumulated in Germany (see Table 4).

Domestic production capacity is increased through the expansion of capital stocks and capital income arises from foreign assets. The accumulation of foreign assets means that domestic wealth accumulation surpasses capital accumulation. By contrast, foreign investment may be higher than the local savings. With perfect capital mobility the rate of investment would be independent of the rate of savings (see Fig. 7).

Whether wealth is kept in real or in financial capital is a portfolio decision, with due consideration of individual preferences concerning yield, risk, liquidity provision and investment horizon. Economically, a close substitution relationship arises between the two investment types: portfolio adjustment takes place until the yields

Table 4 Wealth accumulation in Germany, in billion euros

	2003	2004	2005	2006	2007
Wealth creation					
Real capital accumulation	53.4	49.4	47.8	73.0	97.3
Private households	37.4	33.8	30.9	37.0	46.3
Non-financial companies	19.9	23.2	26.1	43.3	56.6
Government	−2.8	−5.4	−6.5	−5.1	−3.5
Financial sector	−1.1	−2.2	−2.7	−2.2	−2.1
Net credit to the rest of the world	44.8	98.5	105.8	121.8	167.6
Total	98.2	147.9	153.5	194.8	264.9
Savings					
Private households	162.4	167.2	174.6	175.8	179.8
Non-financial companies	9.8	43.1	40.1	43.8	70.1
Government	−90.1	−88.9	−82.1	−42.4	−3.3
Financial sector	16.0	26.6	21.0	17.5	18.2
Total	98.2	147.9	153.5	194.8	264.9
Net monetary asset accumulation[a]	44.8	98.5	105.8	121.8	167.6

Source: Bundesbank 2008
[a]Identical with Net credit to the rest of the world

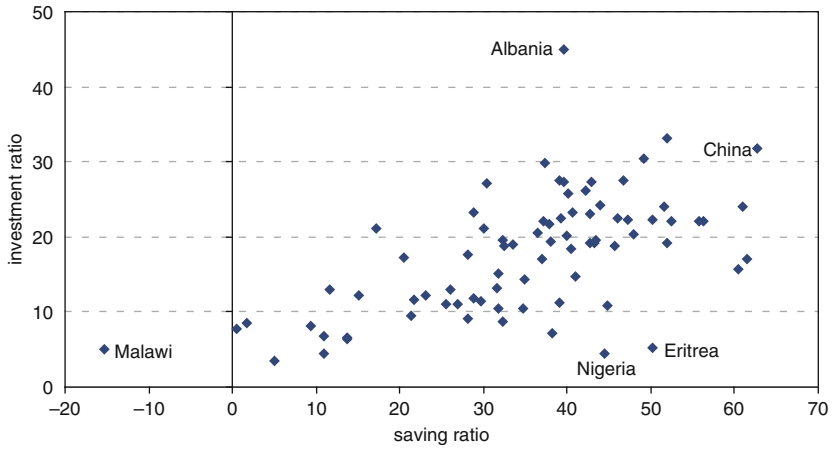

Fig. 7 Saving ratio and investment ratio
Source: Penn World Tables 2006

have equalized. Nevertheless, several asset markets are segmented by certain characteristics, so that an outright equalization of the yields never occurs. In particular, the expectations that private and institutional investors have about inflation, economic cycles and long-term developments in individual sectors can be very heterogeneous. For an open economy, it holds that the level of domestic investment represents the sum of the domestic savings and the net capital import (negative trade balance). Interest and yields on foreign capital can be seen as international transfer payments. Labour productivity grows as a result of increasing capital intensity, so that the overall welfare effect of a capital import is positive.

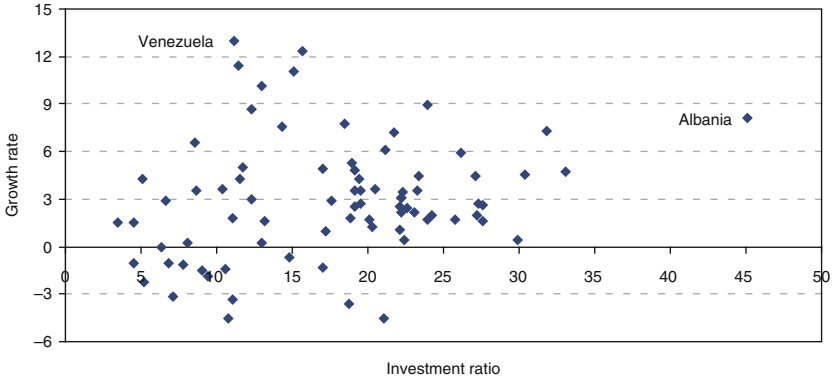

Fig. 8 Investment ratio and growth rate
Source: World Penn Tables 2009

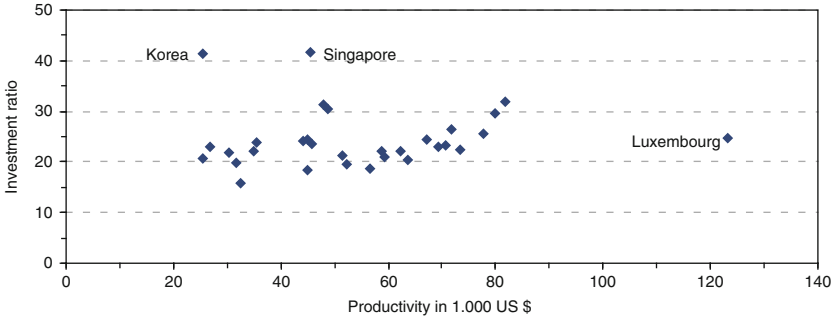

Fig. 9 Investment ratio and productivity
Source: IMF 2009, World Penn Tables 2006

Higher rates of investment have two positive effects on growth (see Fig. 8): on the one hand the capital stock rises, whereby the production capacity increases. On the other hand investment implies a technical renewal of capital stocks. An increase of per-capita income, measured in terms of productivity (see Fig. 9), can be achieved through higher capital intensity and technological advancement. In the process, technological advancement can be linked to new capital (capital-embodied technical progress), tied to labour (increase of efficiency) or take the form of increased overall factor productivity. The "ultimate" sources of higher per-capita income are higher capital intensity and technological advancement. An economy can invest in both of them. Within the framework of endogenous growth theory, the "production" of technological advancement is determined by learning and investment in research and development.

Globalization has far-reaching implications for international capital flows and investor behaviour. The opportunities for temporal and spatial risk diversification and the term transformation between savers and investors have been raised through worldwide economic integration and the increasing size of capital markets. The

worldwide integration can, however – as in the current financial crisis – lead to more intransparency, increased contagiousness and systemic risk, and the destabilization of capital and goods markets. Economic cycles synchronize and expectations reinforce each other.

Out of this, the danger of herd behaviour and the development of bubbles increase and distributing and diversifying risk over various phases of different business cycles might become more difficult. Over the long term, however, globalization offers favourable prospects for the spatial and intertemporal allocation of capital. On top of this is a world economic environment characterized by high growth in developing and emerging nations. This offers new markets in the fields of climate, energy, and health, as well as transport and logistics. The financing of the economic development and new technologies is of particular importance in this environment. It is not currently foreseeable, to what extent this will lead to stronger regulation of international capital markets and financial transactions. The "second phase" of globalization will be less characterized by capital movements, outsourcing, technology transfer and growth convergence in developing and emerging nations, rather more by even closer integration and synchronization of production, trade and logistics. Global supply chains can be synchronized on a "just in time" basis and their logistics chains will be optimized. Additionally, stronger trade in services will occur, such as in the area of health care.

Growth and Inflation

The growth trend of a national economy is determined by real and fundamental variables, such as capital accumulation, technology and so forth. Monetary policy has, at best, short-term stabilizing effects on production and employment during the business cycle. The "neutrality of money" applies here over the long term. In the long term, monetary policy cannot increase employment and production beyond the level established by potential growth. In this case, the monetary impetus merely acts upon price levels by way of the transmission channel of relative prices. Relative prices, and therefore the allocation decisions of economic actors, remain unchanged by monetary policy in the end, only the price level changes. An increased growth rate of money, then, leads to a higher rate of inflation. The effects of inflation on growth, however, are ambiguous. In particular, very volatile rates of inflation may lead to a less accurate anticipation by the economic actors. In general, the higher the rates of inflation are, the more volatile they are. In this case, high and volatile rates of inflation lead to changes in consumption and investment decisions. Investment behaviour changes as well.

The attractiveness of nominal fixed values, such as demand deposits and government bonds, sinks when inflation rates are high and volatile. On the other hand, there is an increase in the attractiveness of tangible assets whose prices rise with inflation, so offering a kind of protection against unexpected inflation. Productive capital then tends to be more attractive, which can lead to more investment and increased growth.

In any case, when inflation rates rise the attractiveness of saving is lowered, since savings often take the form of money, which loses value with inflation.

Wealth and capital accumulation, and therefore growth potential, decrease in the process. If inflation is a result of a cyclical economic overheating, it will be increased even more. The worldwide rates of inflation have retreated over recent decades (see Fig. 10). In developing and emerging economies, the reason for this often lies in increasing stability of monetary policy. But in recent years the inflation rates in the industrialized countries of the G7 and the Euro-Zone have also been lower and more stable than in the past (see Fig. 11). The disciplining effect of monetary and exchange-rate policies can best be seen in the experiences of Italy and Greece, for example. Cost reductions as a result of the international division of labour have had a restraining effect on inflation. All in all, as a result of the lower

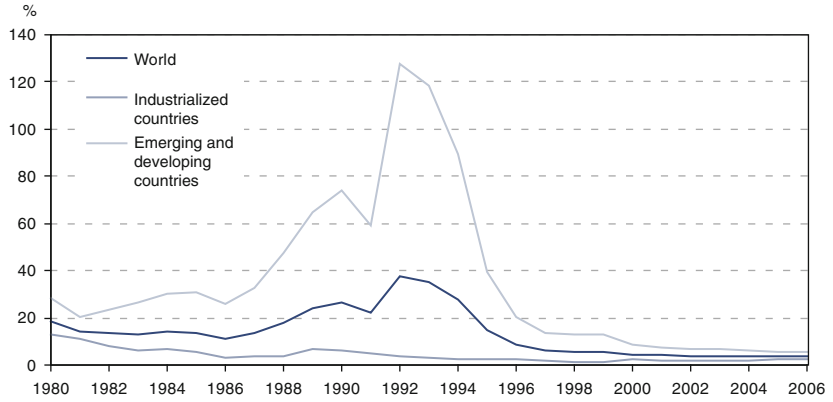

Fig. 10 Development of inflation rates
Source: IMF 2009

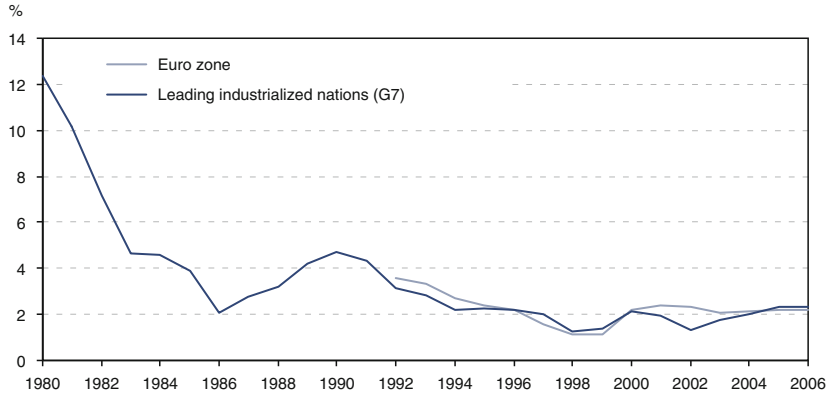

Fig. 11 Development of inflation rates in industrialized countries
Source: IMF 2009

and less-volatile worldwide rates of inflation, household and corporate investment and planning security has increased – with positive effects on growth.

Often, the fall of rates of inflation is attributed solely to increased monetary-political discipline. This is justified also by the use, by firmly stability-orientated central banks, such as the Deutsche Bundesbank, of a money-supply target. Although a correlation between money-supply growth and inflation can be established (see Deutsche Bundesbank, Monthly Report January 2005), a causal relationship between the two variables is in no way certain. The money supply is not exogenously directed in parts by the central bank, but determined endogenously on the basis of an elastic banking system and through demand for money and credit, among other things. Added to this, complex motivations give rise to portfolio switching between money-supply aggregates, which largely avoid monetary-political direction in the short term. In this respect even the influence of money-supply growth on inflation is insignificant.

In addition, increasing labour and raw material costs, unrelated to money-supply expansion, lead to rising commodity prices. For this reason, central banks have switched from money-supply control to *inflation targeting*. The European Central Bank follows a two-pillar strategy that binds both aspects together.

Over the last decade, the rate of inflation in the USA has remained at a very moderate level, although the money supply in the USA has expanded drastically. The reason for the expansion was the struggle against the economic crisis in conjunction with the terrorist attacks of September 11, 2001. However, the expansion of the money supply was not ended as the economic situation improved. The fact that the commodity markets showed no inflation was critical for the monetary-political controls to remain uninvolved. Instead, the increased liquidity flowed into asset markets and, in so doing, contributed to the real estate bubble.

It is clear that tangible assets offer some protection from increasing commodity prices, but are not protected from becoming part of a price bubble themselves. This has been very impressively demonstrated by the developments on the American housing market. In the course of the current financial crisis, the worldwide money supply has been expanded to a great extent. In the beginning, this was to compensate for the idle interbank trade: because the banks were no longer making loans to one another, the central banks stepped in and made loans to the banks. In this respect, the central banks have only balanced the lower money multiplier and kept the liquidity provision for trade upright. This could become a problem if interbank trade resumes and the money multiplier rises again. If the central banks do not reverse their loan extension quickly and firmly, it will lead to a further significant expansion of the money supply.

The necessity of an about-face in monetary policy becomes even stronger when the economic situation improves. The money supply has been significantly expanded in order to fight the current crisis. The danger of increasing inflation lies in the current expansion of the money supply. Increasing rates of inflation in the area of consumer goods also lead to increasing wages. If these fail to materialize, there will be good reason to believe that the readily available liquidity will flow into investments and create new bubbles.