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**Head of Publications Service,
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2, rue André Pascal, 75775 PARIS CEDEX 16, France**

China in the 21st Century: Long-term Global Implications

An Overview of the Issues

by

Wolfgang Michalski, Riel Miller, and Barrie Stevens
OECD Secretariat, Advisory Unit to the Secretary-General

In just one decade and a half, China has transformed itself from a dormant, introspective giant into a dynamic powerhouse of major potential significance to the world economy. Output has expanded at an average rate of nearly 10 per cent and total exports at 17 per cent per year. With an estimated one fifth of the world's population, China now accounts for almost 4 per cent of world merchandise trade and a substantial share of global production (between 3 and 10 per cent, depending on whether current official exchange rates or purchasing power parities are used, and on which set of commodity price data is applied to calculate purchasing power).

This is a remarkable accomplishment by any standards. It is the fruit of a strategy, initiated in 1978, to embark on far-reaching economic liberalisation and to integrate China into the world economy. Following the success of experiments with market reforms, most notably in the agricultural sector, with greater exposure of the economy to foreign investors and freer trade in special geographical zones, China's door has swung further open. A sustained series of reforms has ensued, the most recent of which are the declared intention of the Chinese government to allow convertibility of the currency well ahead of schedule, to step up reforms of the state-owned enterprises (SOEs), and to press ahead vigorously with tariff reductions.

The reforms have been able to build on, and interact with, a range of critical inputs. Levels of literacy among the workforce were high, which in turn helped to engineer the substantial productivity gains of the last 10-15 years. China is also relatively rich in natural resources, with particularly large reserves of coal. The agricultural foundations were strong and reforms quickly led to rising farm incomes which permitted higher rates of saving among the rural population in the first years of reform. Indeed, it was high household saving rates which helped to sustain the high investment rates (around 40 per cent of GDP in the early 1990s) on which rapid growth has fed. Massive inflows of foreign direct investment (FDI), though only a comparably small portion of total capital formation, have proved an important source of foreign technology and improved management techniques. Together with rapidly expanding exports, they have also brought access to overseas markets and much needed foreign exchange.

Thus, the foundations for continued expansion of the Chinese economy appear to be in place. Even if rates of output and export growth were to fall somewhat below current rates in the coming years, China still seems destined to become one of the world's largest (if not the largest) economy sometime next century. On some projections its level of output, although not its living standards and technological development, could become comparable to that of the United States within the next few decades.

I. China's Future: Economic and Social Development Scenarios

There is no single pre-determined route for China's rise to economic pre-eminence. The external environment will doubtlessly play an important part in shaping the Chinese economy; and on the domestic front, the handling of the reform process will be a critical factor. But equally, if not more important, China faces an impressive range of structural challenges whose resolution will have a significant bearing on the size, profile and functioning of the Chinese economy 15-20 years hence. Broadly speaking, these structural challenges fall into four groups: infrastructural; technological and organisational; environmental; and institutional.

Infrastructural deficiencies are likely to prove important stumbling blocks to China's economic development. It is estimated that bottlenecks in transport already cost around 1 per cent of GDP, and little improvement is in prospect given that between the 1980s and early 1990s investment in transport infrastructure declined from 1.7 to 1.0 per cent of GDP. Similarly, demands on energy production will rise substantially. Electricity generation, for example, could grow at up to 6-7 per cent per year to 2010. In terms of financial infrastructure, the difficulty to be faced is that while China, has emerged as a major player on global financial markets, its domestic capital markets, banking sector and financial services are underdeveloped.

The volume of capital inputs is unlikely to pose a problem in the coming years provided that saving rates hold up. But if China is to move up the specialisation ladder away from simple labour-intensive products towards more sophisticated high-quality goods across a wide range of advanced technologies and industries, a considerable investment in human resources is likely to be required over the next 10-20 years to secure the necessary indigenous scientific and technological foundations, the broad skill base, and the organisational know-how. Similarly, China will face the task of feeding 1.2-1.4 billion people whose nutritional behaviour will in all probability change dramatically as incomes rise. Thus in the agricultural sector, too, considerable efforts will be required on all three fronts -- technological, educational, and organisational.

Even at slower than current rates of growth, China faces serious environmental problems. Most of the costs of pollution are borne by the Chinese themselves: for example, only about 20 per cent of industrial waste and 15 per cent of sewage flowing into China's rivers is treated. But there is also considerable cross-border pollution, mainly due to the heavy reliance on coal and to the related carbon and sulphur emissions. The Chinese government has made substantial efforts since the early 1980s to reduce environmental damage. Investment in pollution prevention and control increased from virtually nil to about 1 per cent of national income towards the end of the decade. But given the prospect of continuing population pressures, rapid industrialisation, a tripling of power generation (from 150 GW in 1991 to 430 GW in 2010), and a doubling of car ownership by the end of this century, China's environmental challenge will pervade every sector of the economy.

Finally, there are institutional challenges to be confronted. To name but a few: the current legal framework is not well adapted to a rapidly expanding, increasingly market-based and internationalising economy; corruption is widespread; and continuing reform of state-owned enterprises implies that the social functions and responsibilities they hitherto assumed will need replacing by alternative approaches to health, education, pensions, housing and unemployment. Moreover, considerable effort will have to be expended in maintaining an appropriate balance

between the powers and resources of the centre and the provinces. Many of the latter have increased their abilities during the reform years to determine their own economic strategies, often quite independently of the views and wishes of central government.

Depending on the interplay of external conditions with domestic structural and policy factors in the development of the Chinese economy, overall outcomes could differ significantly.

For example, an optimistic scenario could be constructed based on a strengthening market-orientation of the Chinese economy as the authorities press ahead with economic reforms, and on a quite favourable external economic and political environment. Growth rates continue along the current long-term trajectory of around 9 per cent per annum for output and several percentage points higher for exports. These rates are sustained for quite some time, supported by high levels of domestic saving and investment, including FDI, as well as by an international economy that is willing to absorb the flood of mainly labour-intensive manufactures. This continued high export growth is possible because China itself, after making further progress on import liberalisation, is importing goods and services of a similar order of magnitude. Significant amounts of domestic and foreign funds can be allocated to the expansion and more efficient operation of transport and energy infrastructures, thus reducing bottlenecks. Moreover, low trade barriers coupled with foreign investment and equity participation serve to stimulate competition on domestic markets. Strong growth helps to accommodate much of the surplus rural labour moving to industrial and urban areas, alleviates the repercussions of agricultural and SOE reforms, and provides revenues for environmental improvements. The widening of regional disparities within the country slows as the growth process spills over into less developed provinces providing inputs into the coastal growth poles. Micro-economic reforms, particularly price reforms and other regulatory changes, are managed successfully, thus avoiding overheating, volatile fluctuations in macroeconomic performance and swings in policy.

A different scenario emerges from a combination of a less favourable external environment and a stalled domestic economic liberalisation process. On the external front, China's labour-intensive export drive runs into two major problems. First, OECD countries react with hostility to the assault on their textile, clothing, footwear and other affected industries. Second, the newly industrialising economies (NIEs) in the Asia region react negatively to the penetration of their domestic markets, and to the competition on their export markets from rival Chinese products. Export growth rates fall below output growth rates, depressing output, aggravating adjustment pressures and creating internal tensions which slow the reform process. With the sharp drop in output growth (to, say, around 4-5 per cent) and especially in export growth, the domestic problems begin to pile up. There is insufficient expansion in economic activity to absorb rising unemployment and establish social security systems, so that reform of agriculture and SOEs grinds to a halt. Partly as a consequence, reforms to public finances and the banking system also stall. Inflationary pressures begin to build up again which have to be tackled by price controls and other administrative measures, generating a phase of stop-go macroeconomic policies that undermine confidence in the economic climate. Lack of funding for infrastructure projects renders bottlenecks and environmental problems increasingly troublesome. Meanwhile the depressive effect of slower export expansion on high growth regions is magnified for the less developed provinces whose inhabitants see their living standards fall sharply. Social unrest follows and the liberalisation process suffers a further setback.

A third scenario can be built on the assumption of a favourable external environment but mixed success in the domestic reform process. Exports continue to grow at a brisk pace, albeit largely to the benefit of fast-industrialising coastal areas, so that regional disparities in the level of development and prosperity continue to grow apace. Infrastructure is not expanded quickly enough either to help integrate regions better or to avoid bottlenecks. The reform of SOEs advances, but leads to substantial dislocation of employment, which is exacerbated by large internal rural-to-urban migratory flows resulting from rapid productivity advances in agriculture. Freed-up prices and supply bottlenecks feed inflationary pressures making management of the macroeconomy increasingly difficult. Social tensions persuade the government to concentrate on the issues of widening spatial and social disparities, mass unemployment and overheating, as a result of which bureaucratic policies gain ground. The economy continues to grow, but at rates in the region of only 5-6 per cent.

These scenarios serve to illustrate a range of crucial issues for China's future. First and foremost, perhaps, they raise the question of the sustainability of China's economic growth and the role of the external environment. Is the optimistic scenario too unrealistic, and would a more hostile international trade and investment climate prove a more severe restraint on growth than the relevant scenarios suggest? The prevailing view seems to be that over the coming decade or so, economic growth rates are likely to remain in the high range, i.e. around 8 per cent a year. Any marked slowdown in economic activity would have important implications, not least the risk of mass unemployment, with all that this would imply for social peace. A further critical issue is that of regional cohesion. There is concern that continuing high growth could exacerbate regional disparities in China. Equally, however, there is the possibility that with further progress in economic reform, the prosperity of the more successful regions may spill over into the less developed regions, bringing important and widespread economic and social benefits.

II. China's Industrial Revolution: Prospects for Structural Change in Manufacturing

A range of factors will determine the future pace and character of China's on-going industrial revolution. The primary element is the continued importance of encouraging competitive market conditions across many, if not most products, types of firm, industrial sectors and regions. Progress towards more fully competitive market conditions will involve considerable structural change. However, as OECD countries have long recognised, facilitating structural change - even where markets have long been the tradition - usually requires significant policy reform. China will be no exception. As with OECD countries, two general areas of structural change, and hence sustained policy reform, will shape future prospects for Chinese industry. First, on the demand side, there are structural changes in the domestic and international markets for Chinese industrial goods. And second, on the supply side, there is the challenge of change in the structure, composition and factor mix of the manufacturing sector.

The overall prospects for growth in China's domestic consumer and export markets for manufactured goods are expected to be positive. Growing incomes will provide a general underpinning for dynamic demand. The specific composition and technological sophistication of this demand for manufactured items will depend on such things as the rate at which Chinese people move to the city, begin to live in larger apartments, commute further to work, gain higher average levels of education, and begin to use consumer credit. Inter-connected structural changes will play a role as well since demand for items like furnishings, home appliances and automobiles may be

constrained by prices for housing and food. However, even if China faces a situation where structural factors somewhat constrain consumer demand, it is highly likely that the domestic market for mass-produced, technologically advanced consumer goods will provide a powerful foundation for the growth of labour intensive producers in township and village enterprises, SOEs and joint ventures. For example, meeting the demand for vehicles is expected to push the output of domestic suppliers from 1.2 million cars and trucks in 1994 to between 3 and 6 million by the end of the first decade of the next century.

In export markets China will probably continue to build on its past industrial strength and shift a greater proportion of output towards more technologically sophisticated, if still labour intensive, products. It is widely expected that China will, if global conditions are conducive, be a major player on world markets for a broad range of technologically advanced goods from televisions to machine tools. Lured in part by China's immense domestic market, joint ventures by export oriented foreign multinationals will provide a strong base for China's global reach. The pace of the trend towards higher value-added, export oriented production will depend, in part, on the success in addressing various organisational and transportation constraints. For instance, at an organisational level, large scale SOEs show very low outsourcing ratios for component procurement at 11% in 1991. In contrast, outsourcing by rural township and village enterprises was over 39% for the same year. Manufacturing supply networks that reach into the hinterland may create a strong demand for intermediate goods, but the cost competitiveness of such a strategy will depend on China's capacity to upgrade its telecommunications and transportation networks. Upgrading the phone system, for instance, is expected to require more than doubling the number of installed circuits, from 61 million in 1994 to 140 million by the year 2000.

On the assumption that Chinese exports will continue to grow at roughly the same rate as in the reform period and overall global trade grows at its average for the past fifteen years, China could account for over 6% of the world's merchandise trade by 2010. In this type of scenario the evolution of China's trade basically parallels previous experience with Japan and the NIEs. By 2010 China's position in world merchandise trade would be close to Japan's share in 1980 and considerably less than the NIEs' share in 1990. Attaining this trajectory will call for considerable although not insurmountable adjustments both within and outside China, particularly in specific sectors such as clothing, furniture, textiles, and recording equipment. The crucial issue then becomes the likely reaction of OECD countries -- but also of China's neighbouring Asian economies -- to the pressures to adjust to rising manufactured exports from China.

On the supply front, China's labour, capital and technological resources and raw materials provide a powerful underpinning for long-term industrial expansion. Effective use of these endowments will turn on important changes to allocative conditions, particularly the degree of flexibility of both prices and sources of supply in factor markets. China's diverse raw material and intermediate input markets like steel, coal and plastics will therefore face considerable challenges in responding to industrial growth rates. Similar difficulties can be expected, if appropriate pricing and hard budget constraints are not introduced, for infrastructural inputs such as electricity, telecommunications and transportation.

Labour supply is generally seen as one of the main long-run sources of comparative advantage for Chinese industry. Almost regardless of the future structure of demand, China is expected to continue to specialise in labour intensive manufacturing. What is less certain is how the structural rigidities that limit labour mobility and outsourcing to more remote, labour surplus regions will shape the development of local labour markets, especially in high growth coastal

regions. In addition, managerial and technological skills are expected to be at a premium. Strategic use of joint ventures, FDI and policy measures like technology zones may serve to meet much of the demand for operational, financial and technical expertise.

However, two risks cloud future prospects for adequate supplies of skilled labour. First, there will likely be intense competition for qualified personnel amongst the many pressing and profitable projects outside of the industrial sector, particularly large scale infrastructure. Second, the formation of high quality managerial and technical talent is significantly influenced by the corporate governance and legal frameworks within which firms are created and subjected to the rigours of the market's verdict. Future development of a strong human capital base in China will depend not only on the public (or even private) education system, but also on bankruptcy, ownership and legal reforms that create effective managerial incentive systems.

Developments in China's business services, particularly in financial, accounting and technological areas such as computers and engineering, will also play a key role in developing managers and shaping the pace and composition of industrial growth. China already benefits from effective partnerships with firms from around the world and especially the network of Asian financial centres that serve as both suppliers and competitors. Further financial sector and banking reform will help firms put internal capital allocation on a more strategic footing, including directing the high domestic savings to the most efficient uses. SOE reform aimed at reducing the balance sheet problems of the banking sector would also help set the stage for the development of more efficient capital markets.

Finally, the pace and structure of industrial growth will be shaped by China's capacity to introduce reforms that take advantage of its relatively strong base in heavy manufacturing. Freeing up factor market prices and modernising corporate legal systems will enable allocative decisions to exploit past investments in technology and human capital so that Chinese industry can continue to move up the ladder of technological sophistication. Other supportive policies meant to encourage domestic technical and scientific achievement are already bearing fruit in places like Beijing's "Silicon Valley". In the longer term, wider and deeper forms of collaboration with foreign firms and investors that provide additional technical and financial resources, will further enhance the competitive capacity of Chinese industry.

Assuming that China can achieve a relatively stable transition of the domestic economy and excluding a major breakdown of the world trading system, it is likely that the framework needed to manage the structural changes of the next two decades will emerge. Perhaps the most important issue in this context is the continuation of policy reforms towards competitive product, capital and labour markets, where prices reflect scarcities and set incentives to innovate and invest in human and physical capital. Well functioning markets supported by a reliable legal system not only help to underpin the process of structural adjustment. They also contribute to the stabilisation of the economy at the macro-level and to enhance and broaden the economic growth potential more generally.

III. The Outlook for Agriculture, Energy and Minerals Markets

The sheer size of China's economy, its rapid growth and its increasing integration into the world economy, make it a crucial player in the future development of world markets for raw materials.

Chinese agriculture stands before quite daunting challenges. The country's 1.2 billion population will increase by a further 200 million by 2010, and 300 million by 2025; the trend to urbanisation is set to continue; and per capita incomes are likely to rise by between 2.5 and 4.5 per cent annually. All of this can be expected to bring about important changes in food consumption patterns. While per capita demand for grain (i.e. rice and cereals) for direct consumption will decline, per capita intake of meat and fish is expected to at least double over the next fifteen years. This dietary shift to animal products will put considerable pressure on feed grain demand. (Metabolic conversion of cereals in animals is poor: it takes 2 kg of feed grain to produce 1 kg of poultry; pork requires 4 kg; beef needs 7 kg.) The net result is that total demand for grain could increase from its present level of about 400 MMT (million metric tonnes) to well over 500 MMT by 2010 and close to 600 MMT by 2020.

A key concern is whether China -- with 22 % of the world's population yet only 7 % of the arable land -- will be able to meet this surge in grain demand. There have been serious losses of arable land to non-farm uses in recent years; environmental degradation of land and shortages of water are becoming increasingly critical, both partly due to underpriced synthetic fertilisers and irrigation water supplies priced at a fraction of actual costs; inefficiencies and delays during harvesting, threshing, drying, storage and transport account for annual losses of an estimated 60-100 MMT of grain; and investment in agricultural research fell sharply during the 1980s thereby weakening the basis for further productivity gains, at least over the medium term. As a result, the more pessimistic forecasters predict a substantial shortfall in China's grain supplies over the next 20 years or so, which in the worst case could, by the end of the projection period, be in the range of 100 to 200 MMT. On the other hand, due to underreporting, farmland areas and in some cases yields are probably substantially larger than the official records suggest; yields of some major crops are still below global averages and there is also a huge potential for yield increases through crop specialisation across the various regions of China; losses during harvest, storage and transport could be considerably reduced; and finally significant efficiency gains could be expected from higher investment in agricultural research and irrigation. More moderate estimates therefore put the likely annual shortfall in grain (mainly wheat) at about 40 MMT.

China possess the world's third largest coal reserves, and it is mainly on these that the economy will rely for its energy supplies in the coming decades. Primary coal demand (which currently accounts for more than two thirds of total primary energy demand) is expected to increase at a rate of over 3 per cent a year to satisfy rising industrial output growth and mounting demand for electricity. As in agriculture, the question arises whether China has the capacity to meet this demand with indigenous supplies. Raising output to adequate levels will involve substantial investment in the modernisation of existing mines and new coal mine development, much of which will take time to come on stream. If, in the meantime, economic growth continues at 8-9 per cent, there is a possibility that demand for coal could eventually outstrip supply, even after recourse to stockpiles. If, in addition, bottlenecks in rail transport were to intensify (coal accounting for 40 per cent of rail freight) and/or the cost of extracting the coal were to rise significantly above world prices, China's position could change from that of net exporter to net importer of coal.

With the widely anticipated expansion of road traffic (both passenger and freight), the most rapid growth in Chinese energy demand is expected to be in oil. Passenger kms, for example, are foreseen to more than quadruple between 1991 and 2010. According to IEA projections demand could surge over the next 15 years from its current level of about 3 mb/d to around 6.5 mb/d, implying imports by 2010 of about 2.8 mb/d, an increasing proportion of which could be coming from Middle East suppliers. Faster, more effective exploitation of potentially important oil fields, such as in the remote, hostile environment of the Tarim Basin, could help to reduce the gap by up to 1 mb/d, but there would still be a need to import (net) some 1.5 mb/d. Moreover, if domestic crude oil production costs continue to rise on recent trends, the average cost of Chinese crude oil could well overtake international market prices, casting doubt on the viability of at least some domestic exploration and extraction projects.

As in agriculture, improved efficiency and technological advances could help to reduce potential domestic demand and supply imbalances significantly. In exploration and extraction of coal and oil, for example, advanced geological data processing technology could substantially boost discovery of new fields. Moreover, improvements in thermal efficiency in power generation promise substantial savings in fuel. It is estimated that at current levels of thermal efficiency (30 per cent), coal consumption in China's power sector will rise from about 390 to 1020 million tonnes by 2010. A 5 per cent improvement in thermal efficiency would imply coal consumption of only 755 million tonnes in 2010, a saving of over 25 per cent. Foreign direct investment will be vital for technological progress in this domain.

The quest for improved energy efficiency is also closely intertwined with environmental issues. China ranks as one of the largest contributors of greenhouse gas emissions (11 per cent) in the world, and its contribution over the next 20-30 years will in all probability continue to be extensive. Projections put China's CO₂ emissions by the year 2025 at between 1400 and 1700 million tons. However, it is estimated that for every 1 per cent increase in energy efficiency in power generation, there is a reduction in CO₂ emissions of the order of 3-4 per cent. For both energy efficiency and the environment, pricing plays an all important role, but most energy prices, and especially electricity tariffs, are well below economic cost. For example, average industry electricity tariffs in China in 1993 were approximately one tenth of Japan's, less than one third of India's, and half of Korea's. Consequently, there is little incentive to engage in energy conservation and lower emission levels (total fixed capital spending in the state-owned energy sector devoted to energy conservation investment is as low as 6 per cent).

Contrary to popular perception, China is not rich in non-fuel minerals, although there are a few exceptions. In many products, domestic Chinese ores are often remote from markets, high cost, and of inferior quality (for instance, average iron grade is only half that of internationally traded iron ore). China's usage of minerals and metals, however, is fairly intensive. Its steel output is on a par with Japan's, it ranks among the largest producers of aluminium in the world, is the largest producer of tin, a sizeable zinc producer, and a major user of copper. Given China's stage of development, in which growing infrastructure needs mean particularly intensive use of materials, it is generally expected that in the years ahead, demand for minerals and metals will outpace the rate of economic expansion.

Looking across agriculture, energy and mineral markets, the principal issue is about the implications of likely supply and demand imbalances for world markets. Without question, China is an increasingly important player in all these areas. Erratic shifts in its exports and imports

arising from such factors as sharp discrete jumps in production, command-economy type decisions, and speculative trade into and out of inventories can lead to wild fluctuations in supply and prices, at least in the short run, with significant de-stabilisation of global markets. This is already the case with certain agricultural products (including cotton and wool) and minerals (for example, copper, aluminium and zinc), and could apply also to oil in the future. Vulnerability of world oil markets could increase over the short term to the extent that sharp growth in China's imports may contribute to further reducing OPEC reserve capacities.

Potential long-term effects are also of considerable interest. With respect to grain, oil and certain key non fuel minerals, large increases in China's imports, for example, could lead to sustained price rises. But these may prove less dramatic than expected, since there is considerable scope for expanding world-wide supply capacity and, in the case of energy and minerals, for curbing consumption, exploiting new sources and introducing substitutes. With respect to grain, for example, there is considerable underutilised production potential in the United States, Canada, Australia, Argentina and the Ukraine, and as far as oil is concerned, it is a widely held view that capacity expansion, new extraction technologies and alternative energy sources would effectively cap prices at \$ 25-28 per barrel. Both the problem of short-term fluctuations in supply and prices, and the prospect of long-term expansion of Chinese markets, also focus attention on the issues of the future of China's self-sufficiency policy, and on the kind of international policy framework that would be needed if China were to change its approach to the question of security and stability of supply and develop greater confidence in international markets.

IV. The Implications for Domestic Policy and International Co-operation

China's continuing integration into the world economy holds considerable potential advantages both for China and the international community. Greater openness on China's part could strengthen the country's reform efforts towards a more market oriented economy and bring substantial benefits for their people. From an international perspective, enhanced co-operation with China across a broad range of activities is expected to generate considerable benefits for the world economy over the next decades. However, the integration process will inevitably be associated with a wide range of structural changes, not only within China itself but also in the international economy at large. What will prove vital to the smoothness of the integration process is the geographical and sectorial distribution of the costs and benefits of change as these are perceived by the international community.

As Chinese exports continue to grow, the spotlight is fairly certain to fall on the evolution of China's overall trade balance and balance of payments. The indications at present are that it is unlikely that China will run long-term surpluses on either. Since the reforms began in the late 1970s, the Chinese economy has run both a trade deficit and a current account deficit in most years. Moreover, relatively high rates of growth will continue to absorb high domestic savings and large import volumes, the vast bulk of which will be, as they already are, industrial goods. Machinery and transportation equipment, particularly those embodying higher levels of technology than China can produce domestically, are the fastest growing imports. (China's total import requirements in equipment and technology through to the end of this century are estimated at US\$ 100 billion annually.) However, there is also huge potential for high-value services.

Over the years, as China moves increasingly into line with its comparative advantage profile, the Multi-Fibre Agreement (MFA) is dismantled and the Uruguay Round agreements are implemented, the international environment may prove increasingly favourable both to China's traditional labour-intensive exports and to more sophisticated technology intensive goods.

The impact of traditional labour-intensive exports on OECD markets should prove relatively limited. The affected sectors now account for only a small proportion of output in most of these countries, and have anyway undergone considerable streamlining in the last couple of decades under persistent competitive pressure from Asian NIEs. However, there could well be some resistance among some OECD economies where a certain amount of "catch-up" adjustment in these sectors would be called for which could aggravate perceptions of the magnitude of adjustment required of them. By the same token, many of the industrialising economies in Asia and Latin America are increasingly exposed to Chinese labour-intensive exports and will have to share a large, if not the largest part of the adjustment burden, thus lending a distinct geographic asymmetry to the global adjustment process. The potential for trade tensions between China and many of its Asian trading partners could be exacerbated if, over the coming years, the process of import liberalisation is seen to unfold much more rapidly among the NIEs and ASEAN countries than in China.

Rising Chinese exports in machinery and equipment, on the other hand, would signify a move away from inter-industry towards intra-industry trade with OECD countries and some Asian NIEs, involving perhaps lower adjustment costs for these countries as trade expands than in the case of inter-industry trade. Again, however, the differential between the pace of import liberalisation in China and that in the Asian NIEs (including in the APEC context) could prove crucial to the evolution of trading relations in the region.

In resolving potential tensions of a more systemic nature, much will depend on the speed and smoothness of the convergence of Chinese domestic methods for regulating the economy towards the rule-based functioning of the international trade regime, as well as on the degree to which China and its trading partners acknowledge and abide by the international rules of the game, however these may look 15 to 20 years hence. But also important will be the willingness of both China and the international community to co-operate in tackling many of China's structural challenges which, though less directly related to trade, will have a noticeable impact on the global economy.

China's increasing openness should prove an advantage in this regard. Notwithstanding its huge internal potential in terms of the size of its domestic market, its high savings and abundant labour, its capacity to support a broad range of manufacturing industries, and its wealth of natural resources, China has increased its interdependence with the world economy at several levels. For example, inflows of FDI are impressive by any standards. Moreover, the country's reliance on exports produced by foreign-invested firms is greater than anywhere else in East Asia; indeed, these companies accounted for over two-thirds of China's total export growth in recent years. Outward FDI is a further manifestation of China's deepening links with the world economy. No official records are published, but it is estimated that in 1993 cumulative Chinese investment in Hong Kong alone exceeded US\$ 20 billion. And although equity markets in China are still in their infancy, foreign equity ownership is already encouraged: by 1993, foreign holdings accounted for 5 per cent of the combined capitalisation on the Shanghai and Shenzhen exchanges.

This increasing global integration of the Chinese economy enlarges, rather than diminishes, the scope for co-operative policy action, both on the Chinese domestic and on the international front, in meeting the long-term structural challenges China faces. This applies in particular to the domains of technology, infrastructure, and the environment already identified in the previous sections. For example:

- China's investment requirements in transportation and telecommunications to the beginning of the next century are put at close to US\$ 170 billion, and its energy investment requirements to 2015 are thought to be in the range of US\$ 1000 billion. These are orders of magnitude which surpass even China's very considerable capital resources. The investment opportunities for OECD and non-OECD businesses are therefore very substantial. But it may not be easy to sustain or increase inflows of FDI and foreign participation -- and thus transfers of foreign technology -- into these sectors unless further progress is made not only in terms of setting appropriate incentives for investors and bringing about greater convergence in perceptions of risk, but also and equally important in terms of correcting deficiencies in the legal system. This concerns the protection of foreign investors and their investments, the transparency and predictability of rules, enforcement of law and regulations, and territorial subdivisions.

- With respect to supplies of agricultural produce, minerals, fuels and other raw materials, China faces difficult policy choices on the question of self-sufficiency. If it chooses to rely more heavily on international markets, its role in determining global prices and supply will be considerably magnified. Even if it chooses to maintain a policy of "approximate" independence, seasonal and cyclical factors will ensure that China nevertheless remains a major international player. What will be crucial for the degree of reliance that China places on international markets is the confidence it can have in the ability of major producers to maintain supplies, and in the global rules that govern them. China, for its part -- but also other actors on the international markets -- could draw satisfaction from the prospect of further progress towards industrial reform and a more stable framework for macro-economic activity, which would help to smooth out the artificial fluctuations on international commodity markets brought about in the past by abrupt swings in China's supply requirements.

- China's contribution to world greenhouse gas emissions will increase over the next 20 to 30 years. There is nonetheless abundant scope for improvement. For example, given sufficient progress in increasing thermal efficiency, China could reduce the growth of its annual CO₂ emissions by at least 130 million tonnes by 2010. Such advances, however, may only be possible through a combination of domestic and international initiatives. On the domestic front, reform of energy pricing would bring considerable environmental benefits by redressing incentives. On the international front, foreign technology will prove to be a key ingredient. Private foreign investment through FDI is one source of such technology. Another source are the multilateral and bilateral development assistance agencies as well as international development banks. With respect to these, there is room for shifting assistance away from large-scale supply-side projects towards schemes to promote improvements in end-use energy efficiency.

Advancing the process of China's integration into the world economy will require both its participation in institutional frameworks and mechanisms for dispute resolution, like the WTO and moving beyond rule-making and procedural bodies to a broader set of institutions and relations. This will also imply a strong shift in emphasis away from bilateral towards multilateral approaches such as dialogue with the OECD and possibly, in the longer-term, the G7.

For China and its global partners, progressing along all of these paths will hinge on the capacity to introduce mutually reinforcing policies that build confidence and trust. It is well recognised that this requires consistent and responsible behaviour by all countries. As the measures integrating China into the world economy are put in place and its presence on the world stage grows, the stakes for all participants will be higher. China's integration into the world economy opens up the prospect of a massive new growth pole. Fulfilling this potential, in a way that benefits all countries, will depend on building a common understanding in the key areas of trade and investment, and the wider context of shared economic and ecological responsibilities.

LIST OF PARTICIPANTS

Chairman

Jean-Claude PAYE
Secretary-General of the OECD

Participants

David L. AARON
Ambassador
Head of the United States
Delegation to the OECD

Howard R. BALLOCH
Deputy Secretary
Intergovernmental Affairs
Privy Council Office
Canada

Vincent CABLE
Chief Economist
Shell International Petroleum Company Ltd.
United Kingdom

Kenneth S. COURTIS
First Vice President
and Chief Economist
Deutsche Bank Capital Markets (Asia) Ltd.
Japan

Phillip CROWSON
Head of the Economics Department
RTZ Corp. Plc.
United Kingdom

Michèle DEBONNEUIL (Mme)
Director of Economic and Financial Studies
Banque Indosuez
France

Heinz DOLLBERG

Executive Vice President, Asia
Allianz Holding AG
Germany

H.J. DROST

Member of the Executive Board
Heineken N.V.
The Netherlands

FAN Gang

Deputy Director
Institute of Economics
Chinese Academy of Social Sciences
People's Republic of China

Michael GARRETT

Executive Vice President
Nestlé S.A.
Switzerland

Norbert GRAEBER

Executive Vice President
Head of the Daimler-Benz Group
Representation Office Beijing
Daimler-Benz AG
Germany

GUO Shuging

Director General
Comprehensive Department
State Commission for the Restructuring
of the Economic System
People's Republic of China

Nicholas C. HOPE

Director
China and Mongolia Department
The World Bank

Klaus-Peter KLAIBER

Director General
Ministry of Foreign Affairs
Germany

Justin Yifu LIN

Director
China Center for Economic Research
University of Beijing
People's Republic of China

LONG Yongtu

Assistant Minister
Ministry of Trade and Economic Co-operation (MOFTEC)
People's Republic of China

Angus MADDISON

Professor of Economics
University of Groningen
The Netherlands

Wolfgang MICHALSKI

Director
Advisory Unit to the Secretary-General
OECD

Dwight H. PERKINS

Professor of Political Economy
Harvard University
United States

Robert PRIDDLE

Executive Director
International Energy Agency
OECD

Geoff RABY

Senior Advisor
Office of the Deputy Prime Minister
Australia

Christopher ROBERTS

Deputy Secretary
Department of Trade and Industry
United Kingdom

Vitor RODRIGUES PESSOA

Secretary for Economics and Finance
Government of Macao
Macao

Shuji SHIMOKOJI
Deputy Director General
Intelligence and Analysis Bureau
Ministry of Foreign Affairs
Japan

Pietro SIGHICELLI
Vice President, International Development
FIAT Spa
Italy

John STUERMER
Vice President, Asia
The First National Bank of Chicago
United States

Veli SUNDBÄCK
Member of the Executive Board
Nokia OY
Finland

Makoto TANIGUCHI
Deputy Secretary-General
OECD

John WONG
Director
Institute of East Asian Political Economy
Singapore

Y.C. Richard WONG
Director
Hong Kong Center for Economic Research
Hong Kong

WU Jinglian
Professor of Economics
Development Research Center
The State Council of the PRC
People's Republic of China

Masaru YOSHITOMI
Vice President, Economic Research
Long-term Credit Bank of Japan
Japan

OECD Secretariat

Barrie STEVENS

Deputy Head

Advisory Unit to the Secretary-General

Riel MILLER

Advisory Unit to the Secretary-General

OECD INTERNATIONAL FUTURES PROGRAMME

Today's decision makers face a complex and uncertain world, in which the assessment of the trends shaping our long-term future has become a formidable challenge. Economic, social and technological forces are combining to drive change along at great speed and in sometimes unexpected directions. A growing deluge of information is making it increasingly hard to discern the key factors affecting the long-term.

The OECD International Futures Programme is designed to help decision makers in government and industry come to grips with this challenge. The Programme offers a number of distinguishing features: improved monitoring of the long-term economic and social horizon, with early warning on emerging domestic and international issues; more accurate pin-pointing of major developments and possible trend breaks; greater analytical appreciation of key long-term issues; and better dialogue and information sharing to help set policy agendas and map strategy. All of this is backed up by the OECD's unique experience and capacity for in-depth analysis across a wide range of policy areas of keen interest to governments.

Established in 1990, the Programme consists of four interrelated and mutually supportive elements:

- **OECD Forum for the Future:** a platform for informal high level meetings with the aim of testing new ideas, developing fresh perspectives on problems and advancing the understanding of strategic economic and social issues.
- **OECD Futures Projects:** focused, multidisciplinary research and policy analysis on special themes, largely as spin-offs from Forum for the Future conferences.
- **OECD Future Studies Information Base:** a documentation system providing in succinct form the key findings and conclusions of published and unpublished literature selected from the world-wide output of futures analysis, *now available on CD-ROM*.
- **OECD International Futures Network:** a global network of some 600 people in government, industry and business, and research institutions who share a common interest in long-term developments and related policy issues.

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