THE PEOPLE'S REPUBLIC OF CHINA

AVOIDING THE MIDDLE-INCOME TRAP: POLICIES FOR SUSTAINED AND INCLUSIVE GROWTH

SEPTEMBER 2013

Better Policies

The People's Republic of China – Avoiding the middle-income trap: Policies for sustained and inclusive growth

BETTER POLICIES FOR BETTER LIVES

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FOREWORD

Despite impressive economic performance over the last three decades, China is now at a crossroads, and further reforms are needed to ensure broad, sustainable and equitable growth in the years to come.

Sizeable investment in physical and human capital, a dynamic and competitive export sector, and commitment to sound economic management have been key drivers of growth. But, as the Chinese authorities have emphasised, a transition towards a growth model that is more broad-based and reliant on the dynamism of domestic demand is now needed. Ensuring that growth is sustainable and inclusive will enable China to avoid the middle income trap and possibly make its economy the world's largest by 2030.

Ambitious reforms in the financial, land and labour markets can do much to bring this "Chinese Dream" centred on national development, individual prosperity, good governance and sustainable growth to full fruition. In particular, China would do well to strengthen the coverage of its social security system, address growing health challenges, meet the demand for living space through better urbanisation, improve energy efficiency, increase food security, boost innovation and promote policies to curb pollution. Financing some of these efforts would call for reforming the tax system and improving fiscal relations among the different layers of government.

The experience of OECD countries that have managed well the transition towards more affluent societies underscores the importance of broad-based reforms. For example, efforts to step up innovation and the dynamism of the services sectors become all the more important as a country loses comparative advantages based on low-cost production and exports. Also, ensuring that future growth is environmentally sustainable calls for better price signals to keep pollution in check and avoid the depletion of natural resources.

Drawing on the expertise and experience of OECD and partner countries, this Report presents an update of OECD policy advice in areas that are critical to China's long-term economic performance and social development. They include food security, social safety nets, health reform, green growth, climate change and urbanisation.

The OECD takes pride in its co-operation and policy dialogue with China over the last decades and looks forward to contributing to China's stronger, cleaner and fairer economic growth. China's participation in the work of OECD committees and bodies enriches the policy discussions and outcomes. Today, this partnership is more relevant than ever, as China consolidates its role as a powerful engine of growth for the world economy.

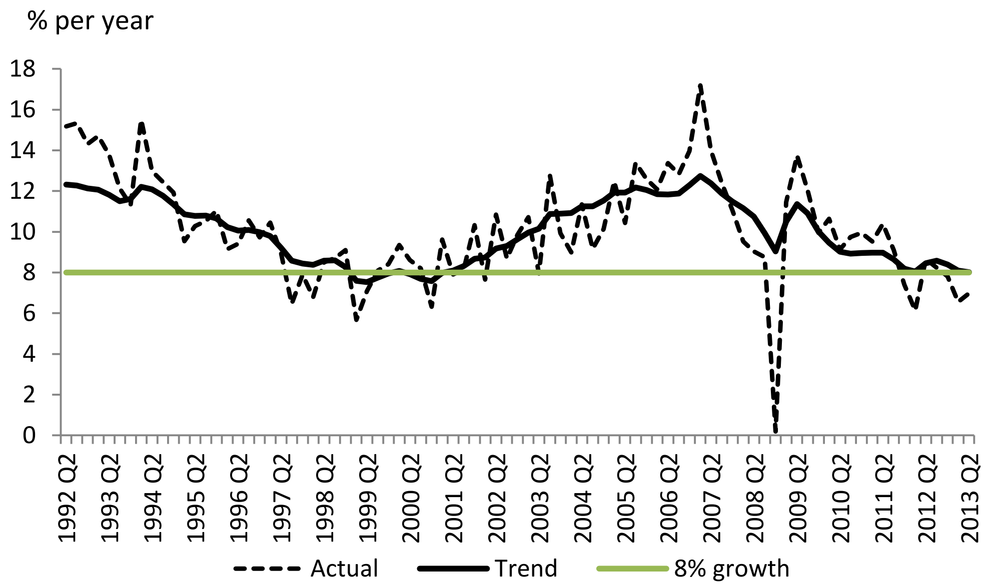
Angel Gurría

Secretary-General, OECD

AVOIDING THE MIDDLE-INCOME TRAP: POLICIES FOR SUSTAINED AND INCLUSIVE GROWTH

China's economic performance has been outstanding since the reforms launched in 1998, to overcome the marked slowing in economic growth in the late 1990s due to bankruptcy of both state-owned enterprises and the banking system. Since then, GDP growth has averaged just under 10% per year. However, in the past five years growth has slackened. While it is difficult to split cyclical and structural factors, it does seem that the underlying growth rate has declined to around 8% per year (Figure 1.1). OECD projections suggest that over the medium-term this slowdown is set to continue, partly because the working age population will soon start to fall. Against this backdrop, concerns have been voiced that the Chinese economy may fail to catch up as rapidly as in the past with the leading world economies, and may get stuck in a so-called middle-income trap.

Figure 1.1 Actual and trend GDP growth



Source: OECD estimates.

IS THERE A MIDDLE-INCOME TRAP?

In general, growth is bound to slow once a catching-up economy has reaped the lower-hanging fruits of technology imports and urbanisation. The number of economies that have moved from middle to high income status (defined as having GDP per capita of $12 500 at 2011 prices) is limited but almost one quarter of the current OECD membership has nevertheless successfully made that transition, including a number of neighbours of China. The factors that differentiate those countries that have made the transition from the others are mostly linked to the quality of economic policies.

China, of course, is a large and diverse country and the pace of development has varied considerably from one province to another. By 2012, three municipalities had already crossed the high-income level. If the targeted growth rate of the 12th Plan is achieved, as is likely, 260 million people will be living in high-income provinces by 2015. If the same growth rate can be maintained until 2020, then one billion people would be living in high-income areas by that time.

What explained past growth?

China's rapid economic growth since 1998 has been the result of the introduction of a major set of reforms that completely changed the incentives facing companies and individuals. To cite just a few of the changes:

- the change of state-owned enterprises (SOEs) from enterprises run as government departments into corporations and sale of minority holdings to the public;
- the establishment of a viable banking system;
- the creation of a new legal environment for companies;
- the entry into the World Trade Organisation;
- the marked reduction of barriers to the movement of individuals;
- and the development of a housing market.

These reforms boosted productivity growth, though not without short-run costs in some cases. However, by 2008 or so, the impetus from these reforms had begun to fade and productivity gains had slowed. This was most noticeable when comparing state-owned and other forms of companies. Following the reforms, the productivity of SOEs grew rapidly – much faster than that of privately-owned companies – as the SOEs reduced their inefficiency. But, after a few years, productivity growth in SOEs started to slacken while productivity in the rest of the economy continued to rise rapidly.

Keeping up trend growth at close to 8% will require a new round of reform in various areas, as highlighted in the latest two *OECD Economic Surveys of China* (OECD, 2010, 2013). Nurturing innovation becomes increasingly important as the technologies used in China catch up with global frontiers. Financial, land, labour market and fiscal reforms are needed to improve resource allocation and make growth greener and more inclusive.

Boosting innovation

There are weaknesses in the current economic structure. In some areas such as processing and assembly, China's exports embody little value added generated in China (for example, in the case of some emblematic high-tech electronic handheld devices). In the long run, with growing competition from lower-cost economies, China may see its comparative advantage in such activities eroded. Accordingly, other segments of the value chain have to be improved: upstream activities such as R&D, design, manufacturing key parts and components; and downstream activities such as marketing, branding and customer service. This will complement China's strong manufacturing capabilities, boost productivity and add value.

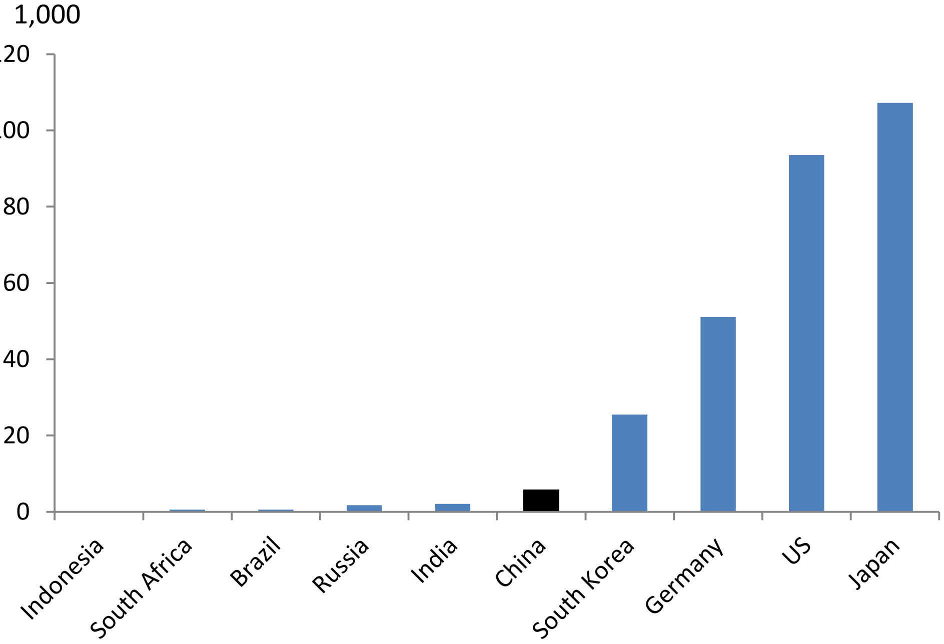
China's upgrading may differ from that experienced by other Asian economies. With a vast and fast-expanding domestic market, Chinese firms participating in the value chains of foreign multinational enterprises can also apply the knowledge acquired from their global value chain activities to the development of new capabilities in the domestic market.

Upgrading will also demand stepping up innovation efforts. Inputs into research and development more than doubled between 2005 and 2012, reaching $164 billion (2.0% of GDP), with businesses accounting for almost three-quarters of total outlays. By 2010, China was second only to the United States and had the world's largest pool of researchers. The number of both patent applications and grants exceeded those in the United States in 2011. Moreover they are a concentrated in high-tech areas such as digital communications.

There are some doubts, though, about the quality of the outputs of the innovation system. Across the world, companies tend to register higher-value patents abroad to maximise the value of their intellectual property. American companies, for instance, register more than 85% of their patents abroad. On the other hand, Chinese companies register only 5% of their patents abroad. The position is changing very rapidly as Chinese companies become familiar with international procedures helped by governmental programmes. Between 2006 and 2011, such patents grew at 35% per year on average. Nonetheless in terms of newly granted foreign patents, China still lags well behind advanced countries, even if it stands well ahead of other emerging economies (Figure 1.2).

Figure 1.2 Foreign patents granted to domestic companies

2011



Source: World Intellectual Property Organisation.

Therefore, China needs to improve the framework conditions for innovation, in particular for innovative start-ups, by reducing constraints and administrative burdens and improving financing for innovative small and medium-sized enterprises. Closer links need to be fostered between academic research and industry. The government should also align the allocation of public funding with international best practices, which usually involve competition between researchers and institutions.

FINANCIAL REFORM

A strong financial system plays a key role in the economy, helping to allocate and re-allocate capital to its most productive uses. While considerable progress has been made in reforming the banking system and putting in place capital markets, China's financial system is at a difficult juncture. Being partly deregulated, it offers opportunities for arbitrage between different markets that exploit differences in regulations between different sectors, seeking artificial returns that would not exist if there were a level playing field between all institutions

Such regulatory arbitrage, with a bank able to avoid committing capital to loan by moving the loan off-balance sheet and obtaining a guarantee from another bank, led to concerns about the liquidity and capital adequacy of banks in mid-2013. In addition, there are other examples of regulatory arbitrage that can undermine stability. Creditworthy SOEs can borrow from banks and make entrusted loans, through trust companies, that carry a higher interest rate. Similarly, depositors are able to invest in so-called wealth management funds and trust products that carry a higher rate of interest than is available in the banking system. Often, the institutions that offer these products are less well capitalised than banks and not as closely regulated and are, as a result, more vulnerable to adverse shocks. So far only the lowest regulated bank lending rate has been abolished.

The solution to these problems is to complete the deregulation of banks' interest rates, coupled with similar capital adequacy ratios for all financial institutions, would enhance financial stability and allow capital to be allocated more efficiently. The creation of a committee, under the chairmanship of the People's Bank, which brings together all financial regulators, is a welcome step in ensuring that regulatory arbitrage is lessened and should also give further momentum to financial reform.

For financial reform to be fully effective, capital markets need to be made more transparent. This is particularly the case for borrowers linked to local authorities. A clear public register of borrowing by these institutions is needed to guard against excessive public sector investment financed by borrowing. It should be frequently and regularly updated.

Full efficiency of capital markets will also require progressive removal of the still considerable restrictions on the transfer capital into and out of China. The extent to which capital inflows are allowed has increased since 2009, but in the first half of 2013, inflows of less than $10 billion was allowed by regulators. If Chinese citizens were free to make investments abroad this would help in ensuring that the profitability of investment projects in China would be judged against the profitability of investments in the rest of the world.

Equally, if the *Renminbi* is to become a world currency in line with the size and strength of the Chinese economy, it will be necessary to allow more inflow of capital into China. At present, more than 20 central banks hold *Renminbi* assets. Market sources suggest that 1% of all international reserves are held in *Renminbi* -denominated assets. The offshore market is growing rapidly but greater private sector access to assets on the mainland of China is needed to make the *Renminbi* a fully international currency.

Land markets

The market for land, or at least the rules governing land use, requires significant reform. Although China is a vast country only a small proportion of land is suitable for housing and agriculture. Indeed, the amount of agricultural land per person is amongst the lowest in the world. Thus land for urbanisation must be used efficiently. At present, there is over-use of land for industrial purposes, notably because local authorities tend to under-price land in such cases, but also because leases only allow one type of use, thereby impeding the relocation of industrial activity when cities expand. In addition leases are for relatively short periods of time (30 or 40 years), which pushes developers to construct low-quality buildings.

Reforms of the land rights of farmers are also needed: a further lengthening of agricultural leases where land is still farmed, and legalisation for the rights of farmers to build on certain parts of land on the outskirts of cities and where land belonging to farmers has been completely surrounded by urban development. Such housing, although mediocre in quality, provides essential shelter for people newly arrived in cities.

Finally, sustainable urban expansion requires an equitable division of the gains from land development between government, developers and existing users of the land. Various pilot projects have been run across the country, with a greater share of the gains paid as compensation to farmers around large cities.

Labour markets and the social safety net

Labour markets in China have changed markedly in the past two decades with over 260 million people now living and working in places that differ from where they are registered. Changes in the regulations that govern their lives are needed for efficiency as well as equity reasons. Efficiency requires a change in order to increase the labour supply to modern industries and services in the face of a declining working age population. Internal migration in China is, to a large extent, circular with people staying in cities for limited periods of time before returning to the countryside. With falling inflows of new migrants, it will be necessary to reduce outflows so that the labour force in the non-agricultural sector continues to increase. To that end, the regulations governing the life of migrants need to be progressively eased. In particular, the provision of a number of public services needs to be separated from registration status. Specifically, education at all levels, public health services and minimum livelihood benefits should be available by means of an identity document based on a period of residence in a city. Thus, migrants can be encouraged to stay longer in cities, while putting people first in the development of the economy.

Reforming taxation and fiscal relations

Following the 1994 fiscal reform, the receipt of tax revenues has become ever more centralised. Since the bulk of expenditure is decentralised, this has made local governments more dependent on the central government for transfer payments. Such dependence, when coupled with the many transfer programmes earmarked for specific purposes, limits the ability of local authorities to deal with local problems and makes budgeting difficult. These difficulties could be overcome by increasing the proportions of tax revenue received by the provincial governments and by ensuring a similar reform within each province. In addition, transfers within each province ought to become more redistributive (see Wang and Herd, 2013).

The first stage of the reform was to change the nature of the Value Added Tax. The Minister of Finance has announced that this reform will be completed at the next meeting of the People's Congress in 2014, one year ahead of schedule. By then nearly all service industries will be included in the VAT system. This should stimulate the demand for the service sector output by abolishing the business tax which was paid by service industries but could not be set against payments of VAT.

Several taxes could be used to raise more revenue without distorting economic incentives. A tax on property ownership has relatively low discretionary effects, especially if it were to be focussed on the value of land-use rights rather than the structures on the land. Ideally, the revenue from this tax could be used to reduce the dependence of local government on property transactions. The latter type of taxation is a barrier to the mobility of labour as people have to pay the tax when they move from one apartment to another. However, to become a significant source of revenue the scope of the property tax would need to be considerably wider than in the current pilot areas of Shanghai and Chongqing. Taxes on resource rents are another source of revenue that does not distort economic activity. Such natural resource rents amounted to over 9% of GDP in 2011. However, on a company-by-company basis, such taxes can be difficult to implement as it is difficult to determine the cost of new production at the company level. Nonetheless, the existing tax needs to be strengthened and should not accrue to the few local governments where natural resources are located, as at the moment, but should be redistributed across all local authorities by the national government. If the resource rents accrue to private individuals or SOEs unwarranted distributional effects can be produced and bad investment decisions made.

Sustainable use of natural resources

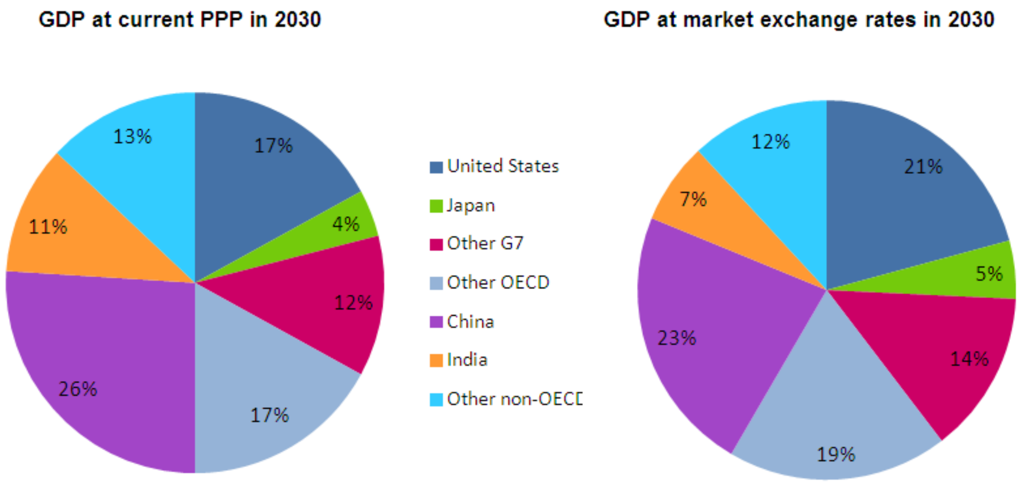
Economic growth will not be sustainable if pollution and depletion of natural resources are not taken into account in assessing well-being. In China, the use of coal is at the centre of concerns over pollution. It creates global warming when burnt and, when burnt inefficiently, creates small particles that are a major concern for public health. National caps on the use of fossil fuels would help to reduce the growth of such emissions. While it may prove difficult to roll out a countrywide emission trading system due to the size and diversity of China, putting a price on carbon would be an effective way of reducing emissions and making growth more sustainable. As well as restraining emissions, it is essential to hold back the growth of demand for water. In particular, excessive use of ground water wells is posing problems of subsidence in many areas. This requires a better pricing system for water, both for farmers and for urban dwellers.

Conclusions

The reforms introduced around the turn of the millennium dealt with many of the most visible impediments to economic growth and helped create a socialist market economy with Chinese characteristics. There are still a number of areas where reform could ensure that growth is maintained over the next decade. Financial, land and labour markets all need further significant change. Helping pay for the cost of some of these reforms, especially by granting more rights to migrants, will require reform of taxation and fiscal relations between different levels of government. Moreover, in order to ensure that growth is sustainable, better price signals are needed to keep pollution in check and lessen the depletion of natural resources. Success in implementing such reforms would help China achieve the economic growth rates projected in the OECD's most recent long-term scenario, which show the Chinese economy becoming the world's largest on any measure of GDP (Figure 1.3).

Figure 1.3 Shares of world GDP in 2030

GDP valued at current and PPP exchange rates



Source: OECD Economic Outlook, May 2013

The remainder of this document looks in more detail at how growth can be made more environmentally sustainable and how more inclusive policies can be developed in the areas of food security, social safety nets, health and urbanisation.

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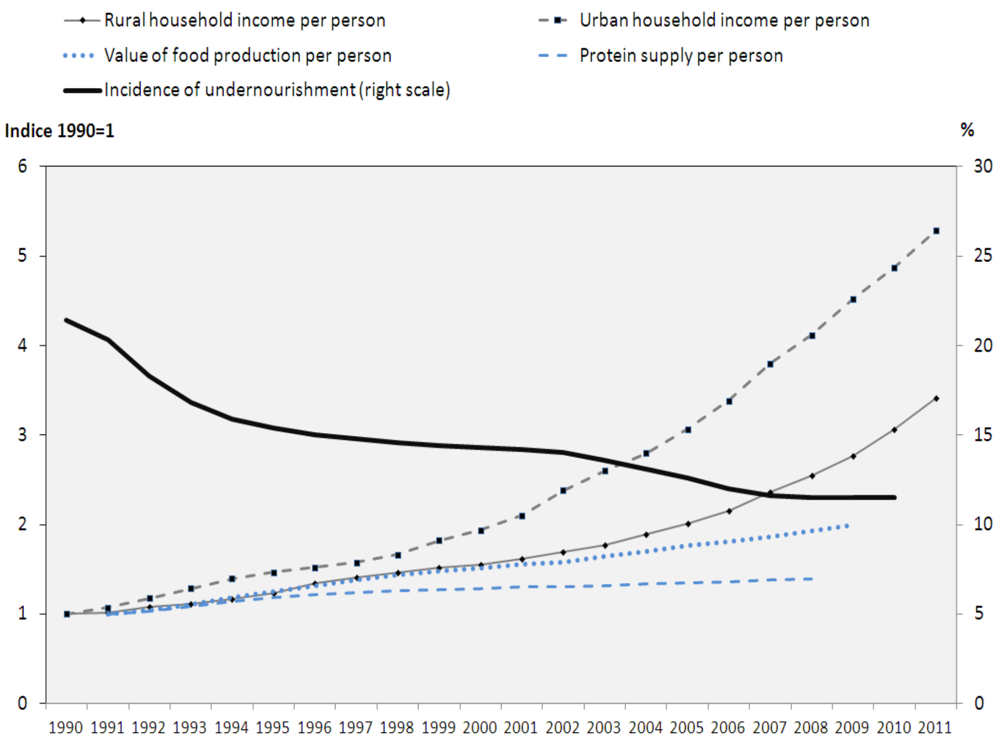
FOOD SECURITY

STATE-OF-PLAY

China has made major progress on food security: the number of undernourished people fell from 254 million in 1990-92 to 158 million in 2010, representing 73% of the worldwide reduction over this time period. In the process, the incidence of undernourishment in China almost halved, from 21.4% to 11.5% (Figure 2.1). Other indicators monitored by the FAO, such as the proportion of children stunted, underweight or affected by wasting[1], fell by 50-70%. This progress has been achieved through **better access to food and improved food availability**. Indeed, in real *per capita* terms, urban incomes rose more than five-fold and rural incomes more than three-fold over the past two decades. As a result, the incidence of poverty, measured at the World Bank's poverty line of USD 1.25 per person per day, fell from 60% to about 13%. Meanwhile, food availability per person doubled and protein supply per person was up by more than one-third. Food insecurity in China is increasingly concentrated among the poorest in rural areas, often members of small-scale farm households (OECD, 2013a)[2].

Figure 2.1 Food security in China



Source: Food and Agriculture Organization, FAOSTAT Database 2012, NBS (2012).

[1] Indicators defined by the WHO's Nutrition Landscape Information System. Underweight: weight for age < -2 standard deviations (SD) of the WHO Child Growth Standards median; Stunting: height for age < -2 SD of the WHO Child Growth Standards median; Wasting: weight for height < -2 SD of the WHO Child Growth Standards median (WHO).

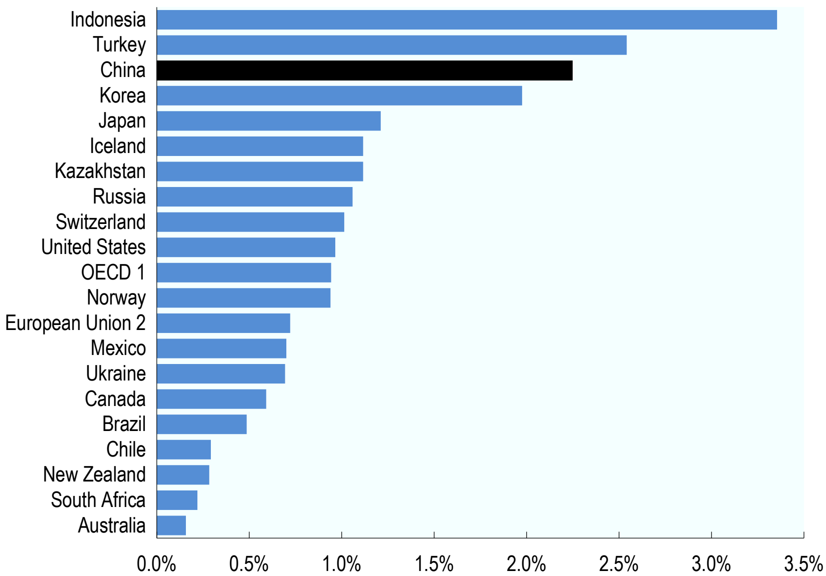
[2] At the same time, the rapid changes in dietary habits that the Chinese population went through have dramatically increased overweight rates and China, as other developing economies, faces now a double burden of nutrition from the simultaneous presence of large underweight and overweight population groups. For example, between 1991 and 2008, the rates of obesity increased by almost five times, from 1% to about 5%.

MAIN CHALLENGES

Even so, in absolute numbers, the total number of **undernourished people in China remains large**, representing almost one-fifth of the world's total. Moreover, almost 20% of the population still suffers from "**food inadequacy**" (which includes not only the chronically undernourished, but also those who may not always have access to sufficient food). At the same time, China is facing a growing **problem of resource scarcity** and shortages of water and arable land in particular. With higher incomes, diets will continue to improve, and demand for water-intensive food, such as meat and dairy, will increase. The government has fixed a "red line" of 120 million hectares of arable land as a minimum to secure self-sufficiency in grain production, but this objective competes with growing demands for land for urbanisation and infrastructure development. Land productivity in China is very high, but at the cost of high input use, of fertilisers in particular. Agriculture has thus become one of the most water-polluting sectors. Further increases in yields will demand new varieties of seeds, new technologies and more equal access to them across regions and various types of farms. **Easing the rules governing land use and transfer** will provide considerable help too, by facilitating the consolidation of scattered parcels (OECD, 2013a).

Figure 2.2 Total Support Estimate by country, 2010-12

Per cent of GDP



Notes:

1. The Total Support Estimate indicator combines producer support (PSE), support for general services to agriculture such as research, infrastructure, inspection, marketing and promotion, as well as subsidies to consumers.
2. The OECD total does not include the non-OECD EU member states.
3. EU 15 for 1995-97 and EU 27 for 2010-12.

Source: OECD, PSE/CSE database, 2013

The OECD Producer Support Estimates show that China's policies to boost agricultural production and farmer incomes entail **rising costs for consumers and taxpayers** (OECD, 2013a). The amount of transfers from consumers (when domestic prices for agricultural commodities are set above international levels) has been trending up since the late 1990s, though it has fluctuated widely, reflecting volatile international markets. Budgetary transfers for producers have also increased, albeit more steadily. The latter are provided via input subsidies for agricultural chemicals (e.g., fertilisers), improved seeds and agricultural machinery and, more and more, through direct payments at a flat rate per unit of land. Support provided through these two channels relative to gross farm revenue has risen rapidly in China, to reach 17% in 2012. This is close to the OECD average of 18.6% (which has tended to decline over time) yet much higher than South Africa's or Brazil's producer support, which stood respectively at 3% and 5% of gross farm revenues in 2012.

Moreover, the *total* cost of support provided to China's agriculture sector, as measured by the OECD's Total Support Estimate[3], stood at 2.3% of GDP in 2010-12, far above the 0.9% OECD average and higher than in Russia, Brazil, South Africa and Ukraine (Figure 2.2; OECD, 2013b). OECD countries have on average reduced the amount of support that they provide to the agricultural sector, and in several countries (e.g. EU, Switzerland, US, Chile) there has been a significant **restructuring of policies**, with public support increasingly delinked from production decisions. These reforms have reduced trade distortions and spill-over effects onto the economies of developing countries. On balance they have contributed to higher incomes in developing countries, and thus to improved access to food (OECD, 2013c).

Key lessons from OECD and partner countries [OECD, 2013c]

- **Income growth** is the key to lasting improvements in food security.
- **Sustainable agricultural development** has a central role to play, both in boosting food availability and raising the incomes of the poor. Increased investments in agricultural research, technology transfer and farm extension and advisory services offer higher returns than agricultural subsidies. They help farmers but also benefit consumers by increasing overall food supply.
- Strategic public investments for agricultural development can help attract private investments. The OECD has developed a **policy framework for sustainable investment in agriculture**, which is designed to help policymakers enhance the development benefits of agricultural investment.
- Government efforts to raise incomes need to be **complemented by other policies** to improve nutritional outcomes. Better access to basic public services leads to faster improvements in food security.
- Governments should **integrate agricultural development policies with wider growth and development strategies**. Countries that have been most successful in reducing food insecurity have been the ones in which balanced rural development has facilitated the progressive integration of rural and urban labour markets.
- Policies that subsidise or mandate the use of **biofuels** should be **removed** as using land for biofuel production puts pressure on food prices.
- Governments could help **reduce consumer waste** and modify dietary patterns (e.g., through education), in order to sustainably increase food availability.

Selected policy recommendations for China

- **Raise income of the poor through economy-wide reforms**: Stimulate income growth, particularly in rural areas where the vast majority of the poor live, to improve their access to food. Further promote rural development in addition to agriculture development, and facilitate the integration of the families of migrant workers in urban areas. Further step up efforts to improve rural infrastructure and access to basic public services, such as education, healthcare, pension systems and social security, in rural areas.
- **Complete the conversion of input subsidies into direct payments and, ultimately, into strategic public investments**: Gradually replace input subsidies by direct payments paid at a flat rate per unit of land, with no requirement to purchase a given input or to produce a specific commodity. This would help decrease interference with producers' decisions and enhance farmers' incomes more effectively, thus improving their access to food. Over time, consider shifting from decoupled direct payments to strategic investments in the agricultural sector.

[3] This indicator combines producer support (PSE), support for general services to agriculture such as research, infrastructure, inspection, marketing and promotion, as well as subsidies to consumers.

- **Improve agricultural productivity via enhanced innovation**: Further strengthen research and development, technology adoption and transfer, education, and farm training and advisory services. Consider new seeds (including GMOs), application of better fertilisers (releasing nutrients over long periods) to increase productivity at lower environmental costs.
- **Enhance efficient water use: Adjust water pricing** to cover water provision costs and to stimulate a move away from water intensive crops.
- **Diversify sources of food through stronger integration of domestic and international agri-food markets**: With large monetary reserves and continued significant current account surpluses, China can buy food on international markets. Progressively narrow the scope of grains covered by the 95% self-sufficiency objective. For example, while maize used for human consumption could still be covered, maize used for industrial processing and for feed could be partly excluded. Increased maize imports would ease the shift of land to other, more productive uses, including for urbanisation and infrastructure development. Stronger integration with international markets would also reduce the volatility of food supplies on domestic markets.
- **Enhance development of the land market**: Land conversion remains a major source of social conflict in rural areas. To ease such conflicts, land conversion from agricultural to other uses should be based on market prices for land, which would allow farmers to accumulate initial capital to establish a non-agricultural activity in rural areas or to facilitate their migration to urban areas.

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- OECD (2013c), Global Food Security, Challenges for the Food and Agricultural System, OECD Publishing, Paris.

OECD'S WORK ON FOOD SECURITY

The OECD works on both the supply side and demand side dimensions of food security. On the supply side, it works on how government policies can influence the availability of food sustainably. This stream of work has included work with other international organisations for the G20 on managing agricultural price volatility and on ways of increasing agricultural productivity sustainably. On the demand side, OECD has focused on ways in which governments can improve their citizens' access to food, in particular through agricultural development and measures to reduce the incidence of poverty. The Development Assistance Committee works with its members to engage with partner governments and other country-level stakeholders to strengthen and support national policies for food security. The OECD also collaborates with the Food and Agriculture Organisation (FAO) on food security, including via the joint annual publication Agriculture Outlook which is recognised as a valuable source of market information, analysis and projections.

FURTHER READING ON FOOD SECURITY

- OECD-FAO (2013), Agricultural Outlook 2013-2022, OECD Publishing, Paris.

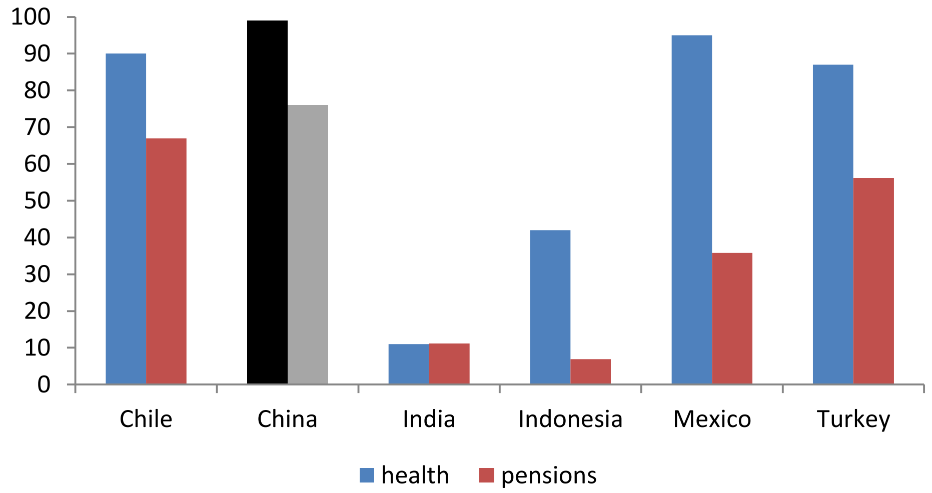
SOCIAL SAFETY NETS

STATE-OF-PLAY

Public social spending in China has **risen rapidly** since 2006. In 2012, it stood at **9% of GDP**, exceeding the levels in some other emerging economies (e.g. Mexico or India), but standing below the OECD average (21.8%), Russia (15.5%), and Brazil (16.3%) (OECD Social Expenditure Database). The bulk of the increase in expenditure in this period has gone towards **extending the coverage** of different forms of social protection, in particular contributory social schemes (Figure 3.1). Notable reforms include: the generalisation of the minimum subsistence allowance to the countryside; new medical insurance schemes for people with rural registration status, dependants of registered urban employees and students; the introduction of a new pension system for people living in the countryside and another for migrant workers. Under the aegis of China's 12th Five Year Plan, public social expenditure is projected to further increase and rise faster than GDP in the coming years (OECD 2012a). Measures combining social insurance and assistance schemes are expected to contribute to establishing a social security system covering all residents in urban and rural areas by 2020.

Figure 3.1 Coverage of government health and pensions systems

As share of population and employment respectively (%)



Note:

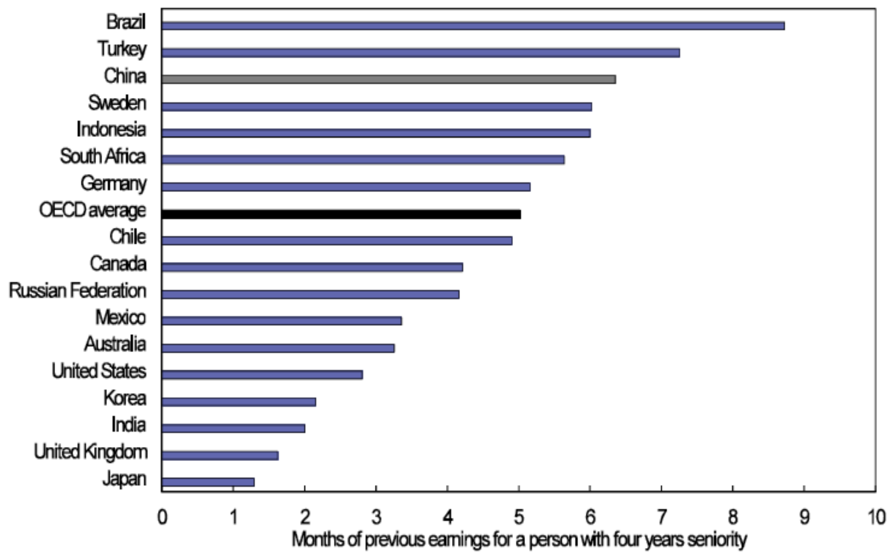
1. The reference periods are Turkey, 2009; Indonesia 2008& 2009; Chile, 2009; Mexico, 2010; India, 2010; China, 2012.
2. Data for India exclude civil service schemes.

Source: OECD Employment Outlook 2011 for all countries except China where data comes from the annual communiqué on social and economic developments

MAIN CHALLENGES

The **average level of benefits** under many of the rural **social protection schemes is low**. In urban areas, many firms do not pay contributions for their staff as enforcement is poor and penalties for non-compliance are almost non-existent. Furthermore, the system of **unemployment insurance** in China rests to a very large extent on severance payments determined by the labour contract of the employee. For those workers with labour contracts, the severance payments are quite high, which underlines the level of benefits in comparison to other countries (Figure 3.2). However, in 2010, only 4% of migrant workers were affiliated to the unemployment insurance system and less than half had a labour contract despite the new labour law. As a result, the proportion of the **unemployed receiving benefits is under 10%,** compared to 30% in Brazil, 25% in Russia and 10% in South Africa (OECD 2011; OECD 2012a).

Figure 3.2 Maximum payments of unemployment and redundancy benefits for a person laid off after four years work.



In addition, despite many reform initiatives undertaken in recent years, China's pensions systems remain **segmented**, with different regimes for the rural, urban and public sectors, as well as within each of them. Furthermore, a complementary private pension system is emerging, though it is still small. The segmentation of the basic pension system raises issues of efficiency, in that labour mobility is impeded, and fairness, to the extent that replacement rates vary significantly across sectors and work experience in one sector is not recognised for pension purposes after the individual moves to another sector. Some of the recent reforms have in fact worsened existing fragmentation, while other reforms, notably those providing for greater geographical pooling, have so far only been partly implemented.

Another challenge is that under current rules the retirement age is very low, (currently 60 for men, 55 for white collar women and 50 for blue collar women). This is a major challenge for retirement income provision in a rapidly ageing society. This is of course politically sensitive, as in many other countries. Training of older workers and incentives for them to stay in the workforce longer would help. One of the first measures that could be taken is to increase the normal pension age. In addition, **effective replacement rates are fairly modest and are projected to decline further** (OECD, 2012c). This may be politically difficult to sustain in a rapidly ageing society where the elderly reside less and less with their descendants. A third challenge concerning pensions pertains to the **distribution of fiscal costs**: with an ageing rural population, the present arrangements imply that much of the additional burden entailed would be shouldered at sub-national levels by local governments with insufficient resources.

KEY LESSONS FROM THE OECD'S WORK[4]

- Retirement age increases can positively affect economic growth, both in the short run, through increased labour force participation and higher aggregate demand, and in the long run, by contributing to fiscal sustainability. Ensuring adequate labour force participation by older women and men is often essential for the adaptation of pension systems to demographic change. More generally, countries will need to adapt to increased life expectancy. Providing adequate social benefits to all age groups through social security and care schemes will need to be balanced with **maintaining expenditures at a manageable level**. One key challenge for emerging economies is to meet the long-term need for greater additional revenue to finance social protection expenditure while sustaining growth. Some countries may need to improve revenue collection, e.g. via enhanced tax compliance and a broadened tax base.

[4] In collaboration with the ILO. See OECD/ILO, 2011 and OECD, 2011.

- Some G20 emerging economies have introduced **innovative social policies**, by combining cash transfers to poor households with the provision of essential services in areas such as health, nutrition, education, and by linking social protection and employment policies. China, though, should avoid linking conditions of service use to cash benefit receipt if services are not available in some (rural) parts of the country as this would mean poorer or more rural areas would miss out on cash and services. As the block grant approach in Brazil is blamed for leaving eligible families without support it is important to ensure that the identification process works and that services are available to all those required to take them up.
- An important challenge for emerging economies is to ensure that social protection systems neither **weaken work incentives** nor create obstacles to the development of formal employment. Social assistance benefits have been shown to have less adverse impacts on the labour market outcomes of recipients than often thought. This is, for example, the case of the South Africa Child Support Grant, which has enabled very poor beneficiaries to engage more effectively in searching for a job. However, some social insurance programmes, such as unemployment insurance, could trigger counter-productive results if they are inadequately designed or administered.
- Undesirable outcomes can be avoided by developing **integrated social programmes**, which reduce administrative costs and, in the case of social insurance, increase the ability of governments to pool risk to minimise incentives for informality. Furthermore, the creation of non-contributory programmes can allow a smooth transition towards a contributory programme. This can be done through income-tapered contribution subsidies. Finally, social policies should integrate income support policies with policies to assist beneficiaries in their job search or to help them overcome social problems (OECD/ILO, 2011 and OECD, 2011).

Selected policy recommendations for China

- Improve the **coverage and targeting of unemployment insurance**: shift the focus from job security (strict labour protection) to policies oriented towards facilitating the job search and improving the employability of workers, which will help reduce the incidence of informal employment and improve coverage. Make sure that unemployment compensation is sufficiently redistributive among those eligible by introducing risk-pooling mechanisms.
- Social assistance programmes, such as conditional cash transfers, could be further strengthened by **better targeting** individuals most in need, via means-testing, together with promoting mechanisms of in-work benefits. Introduce adequate monitoring and enforcement of sanctions in the event of non-compliance with the programmes' conditions.
- **Lift the retirement age**; align the age for men and women and then link to life expectancy.
- Gradually **consolidate the various pension regimes**. Even if different schemes for different categories of workers (employees and self-employed notably) are to persist, these should be unified over time, first provincially and then nationally, phasing out the distinction between rural and urban residents.
- Shift more of the cost of rural pensions to the **central government from county governments.**.

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OECD's work on social policies

The OECD work on *social policies* aims at improving social welfare in a context of population ageing, globalisation and rapid technological change. Its activities are focused on:

1. Modernising social protection systems to extend opportunities for all and respond to demographic challenges; this includes notably pension systems, disability and family benefits as well as long-term care.
2. Designing employment-oriented social policies to promote the participation in the labour market of under-represented groups while combating poverty and social exclusion; this includes notably unemployment and social assistance, in-work benefits and housing benefit.

The impact of population ageing on the labour market and social safety nets, the performance of long-term care systems, the financing of social protection systems, and the implications of migration flows are other major themes of the OECD's work in this area.

Further reading on social safety nets

- Pensions at a Glance

The first comprehensive publication offering a comparison of key features of pension systems in OECD countries, including retirement ages, benefit accrual rates, ceilings and indexation.

- Society at a Glance

More than 30 indicators providing the broad perspective needed for international comparison and assessment of social trends, outcomes and policies.

- Pension indicators :
http://www.oecd.org/els/public-pensions/oecdpensionsindicators.htm

- Benefits and wages : http://www.oecd.org/els/benefitsandwagesoecdindicators.htm
- Social expenditure :
  http://www.oecd.org/els/soc/socialexpendituredatabasesocx.htm
- Families and children : http://www.oecd.org/els/family/oecdfamilydatabase.htm

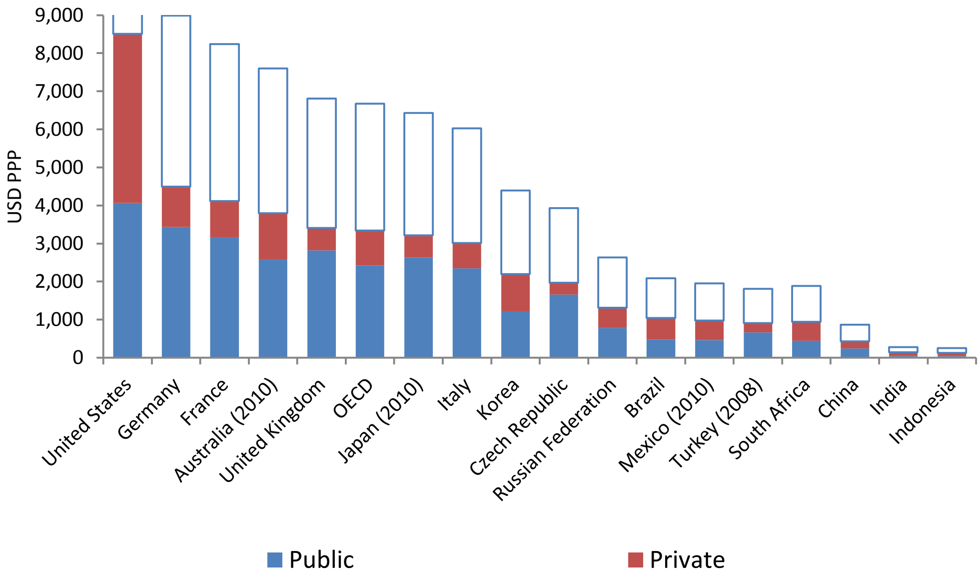
HEALTH REFORM

STATE-OF-PLAY

China has made considerable progress in improving population health outcomes. Life expectancy at birth in China has increased by more than 25 years since 1960 to reach 73.5 years in 2011 (OECD average: 80.1 years). These gains in longevity can be attributed to a number of factors, including rising living standards, better nutrition and earlier reforms that led to a sharp decline in the prevalence of infectious diseases. More recently, the Chinese government launched a series of ambitious reforms to achieve universal access to health insurance coverage. Entitlements and benefits have been reformed to improve access to medical care in all parts of the country. In addition, policies have been introduced to provide affordable access to essential medicines and align provider payment incentives with general objectives of the health systems (OECD, 2012a and OECD 2013b).

Health spending in China grew at a slightly *higher rate* than overall economic growth between 2000 and 2010, at about 11% per year per capita (OECD, 2012b). In 2011, total health spending accounted for **5.2%** of GDP and health expenditure per capita stood at **USD 432**, below OECD average (9.3% of GDP and USD 3,339 respectively) but in line with international standards given China's national income. In 2011, 56% of health spending was funded from public sources, well below the average of 72% across OECD countries (see Figure 4.1). Remarkably, most of the Chinese population (95% in 2011) is now covered by basic health insurance. Progress has also been made in reducing the share of health spending financed by out-of-pocket payments, which decreased from 60% in 2001 to 35% in 2010 (OECD, 2012a), with a target of 30% to be reached by 2015.

Figure 4.1 Total health expenditure per capita, public and private in 2011



Source: OECD 2013b and OECD 2012b

MAIN CHALLENGES

Looking ahead, like many OECD and emerging countries, China must address the **rise of non-communicable, chronic diseases** (e.g., cancer, cardiovascular diseases, diabetes, asthma, etc.). Important risk factors include smoking (Chinese men have one of the highest smoking rates in the world), alcohol consumption, physical inactivity and unhealthy diets and obesity (the rate of which tripled in China in the last 15 years) (OECD, 2012b). China's non-communicable disease burden is higher than other emerging economies and outcomes are worse. There are important implications for the health system in tackling chronic diseases.

The current system is tilted towards the provision of complex hospital care. The result is that chronic diseases are addressed very late in their course. Unfortunately, the health insurance system provides greater subsidies for the treatment of conditions in hospitals rather than ensuring access to screening and essential drugs in **primary care.** In addition, while the number of doctors has risen fast, incumbent doctors are often insufficiently qualified. Attracting skilled doctors to work in primary care is difficult due to low salaries and poor career prospects (OECD 2013a).

Furthermore, while the growth of health insurance has been remarkable, there are still important challenges in **coordinating the different health schemes** that cover different population groups, offer different benefit packages, rely on different financing approaches and are administered by different levels of government. The fragmentation of insurance schemes combined with the *hukou* system has particularly impacted on the effective coverage of *migrant workers* (OECD, 2012a). Typically, migrant workers pay higher out-of-pocket expenses and have to claim reimbursement of fees in their home county with much lower reimbursement rates and longtime lags.

There are also considerable challenges in the **organisation and financing of the hospital sector**. Since 1997, the Government has promoted a re-orientation away from hospital care towards community healthcare; nonetheless the latest available figures suggest that 2/3 of health expenditure is still absorbed by the hospital sector (OECD 2010a). Although hospital ownership remains public, most of the financing of hospitals comes directly from patients. It is estimated that government funds make up only 10-25% of the operating revenues of hospitals, the remainder being mainly financed through charging patients for drugs and high-technology procedures. The current fee-for-service system **distorts the provision of services towards cost-inefficient procedures and fuels inefficiencies in the Chinese hospital system**. The government has attempted to deal with the problem by restricting the mark-up of pharmaceuticals, but to date this is only applied at the primary care level. Furthermore, this approach does not address the underlying problem, which is that government is providing inadequate financing to fund the operating costs of hospitals, meaning they are then required to make up the difference by charging patients (OECD, 2012a).

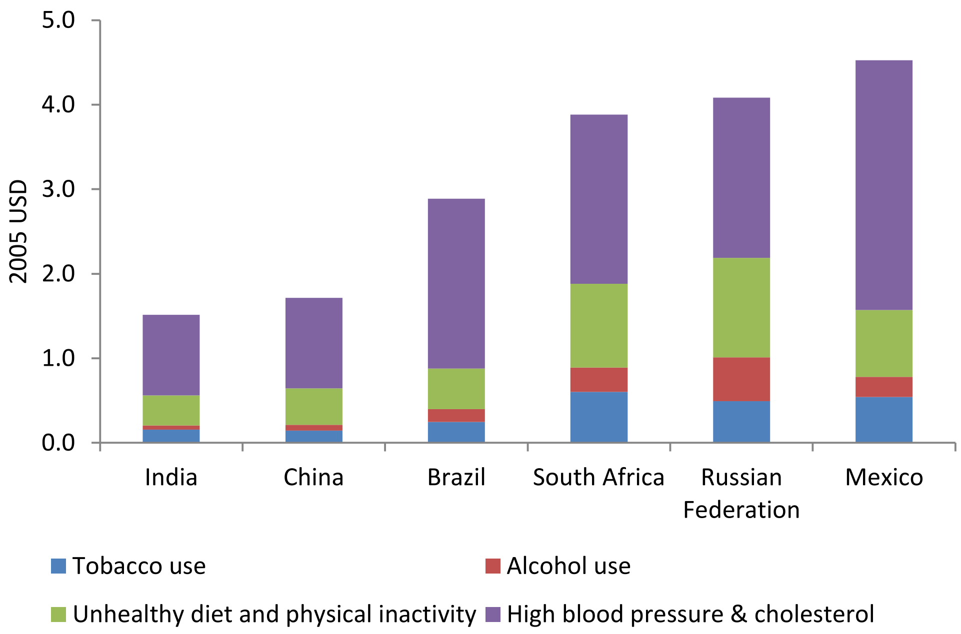
I**mproving access to essential pharmaceuticals** at affordable prices is a further challenge. In 2008, pharmaceutical spending accounted for 2.1% of GDP, or 49% of total health expenditures in China, compared to an average 1.5% of GDP, or 20% of total health spending in OECD countries (OECD, 2010a and OECD, 2011). Pharmaceutical consumption is expected to increase, driven by the shift in morbidity, population ageing, expansion of health insurance, and growing attention of pharmaceutical companies to one of the fastest growing markets in the world. As such, the adoption of a sound system to ensure efficient use of pharmaceutical spending is a priority. China's National Essential Drug Programme aims to tackle this issue. In order to secure access to inexpensive quality medicines, **centralised procurement procedures** are to be put in place, launched at provincial level. Under this framework, provincial authorities have been piloting various tendering processes, whose assessment should help determine the most efficient ways to get low prices and high quality essential medicines. Centralised purchasing is also expected to improve the availability of drugs (OECD, 2012a). Many OECD countries see the development of generic markets as a good opportunity to increase efficiency in pharmaceutical spending and most countries implemented policies to promote generic drug competition and substitution (OECD, 2010b)

KEY LESSONS FROM OECD AND PARTNER COUNTRIES (OECD, 2012A)

- The reduction of chronic diseases can be achieved via **cost–effective preventive interventions** such as mass media campaigns, nutritional labelling and marketing restrictions, food taxes and subsidies (Cecchini et al., 2010). Smoking, for example, can be reduced via increased taxes on tobacco, enforcement of smoke-free work places, labelling of tobacco products and public awareness campaigns. The estimated cost of introducing such interventions in emerging economies is outlined in Figure 4.2.

- The reduction of chronic diseases can also be supported by regularly monitoring and analysing **Health Care Quality Indicators** for such diseases. Tackling the social determinant of chronic diseases to prevent the development of these diseases requires concerted **government actions across different policy areas**. The Ministry of Education and the Ministry of Agriculture are, for instance, other important stakeholders that can actively support health policies.
- OECD experience suggests that the Chinese health system should focus more on **new modes of integrated care** to prevent and treat chronic diseases in which primary ambulatory care is coordinated and, sometimes, fused with specialist hospital care into a single organization. The experiences from integrated delivery systems show that excellent outcomes may be reached with a lower number of beds and shorter length of stay. In this framework an important role may be played by township health centres, which are predominantly located in rural areas. **Expanding primary care** and care in the community while moving away from hospitals is a policy objective in virtually all the OECD countries. Sweden, Canada and Australia are examples of countries which are actively pursuing policies of expanding healthcare services at the community level.
- A fee-for-service **hospital payment system** is inherently inflationary, which is the main explanation for why most OECD countries have chosen to abandon it. They have moved towards a case-based payment system, using diagnostic related groups, often combined with a global budget.

Figure 4.2 Annual cost per person of a preventive package to tackle the main risk factors for chronic diseases (2005)



Source: OECD, 2012a

Note: cost of a package including the most efficient prevention policies (UN best buys) to tackle the main risk factors for chronic diseases

Selected policy recommendations for China

- Enhance public education and awareness and other means of prevention and early diagnosis to **reduce the incidence of chronic diseases**. The cost of a comprehensive prevention strategy for China would be 1.72 US$ per year per person; an investment lower than for other large middle income economies. Build on the ongoing expansion of urban community health centres to make sure primary care plays a greater role, notably in prevention and in treating chronic diseases that don't require a hospital visit.

- Regularly **monitor the quality** and cost of health care provided, by systematically collecting health care and hospital performance indicators (such as those monitored by the OECD).
- **Harmonise benefits** across different health insurance schemes while promoting administrative efficiency, including by expanding the use of electronic health records. Improve migrants' healthcare coverage, independently from their registered residency status (hukou). Ensure that a greater proportion of health insurance schemes' funding is shouldered by the central government.
- **Reform the hospital sector**: Change the hospital payment system. At the very least, hospitals push doctors to over-prescribe high-cost medicines and high-technology examinations because these products generate large profit margins for hospitals that are necessary to cover losses from regulated prices in other areas. Fees should be matched more closely to the cost of production. In addition, give public hospitals greater latitude to manage their personnel, so as to be able to adapt to changing circumstances. Movement to a more enterprise-oriented management and accounting system is needed to ensure higher quality of service. Performance indicators can be a useful tool in this perspective, when properly used.
- Ensure **adequate training and pay** to encourage doctors and other health workers to choose career paths that match social needs.
- Further promote an **efficient use of pharmaceuticals** by improving access to affordable and effective medicines. Financial incentives that encourage unneeded prescriptions should be removed, and centralised procurement procedures promoted.

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OECD's work on health reform

The OECD helps countries to increase the efficiency and the value for money of their health systems by applying economic analysis to health policies. The mission of the OECD Health Division – advising policy makers and informing public and private stakeholders and citizens on how to address demands for more and better quality health care – is particularly important with public budgets under strain. The Health Division produces reliable statistics of health system performance and helps countries benchmark their policies against high-performing health systems. We identify good practices across our member and partner countries on issues such as: strengthening primary care and the prevention of illness; improving the efficiency of hospital services; paying doctors and hospitals in ways that assure high-quality care; adapting health care to address the complex needs of the frail elderly; and, assuring optimal care for chronic diseases, particularly cancer and cardio-vascular diseases. By sharing knowledge and expertise on best practices in these areas and by encouraging countries to learn from their peers, the OECD helps design better health policies for better lives.

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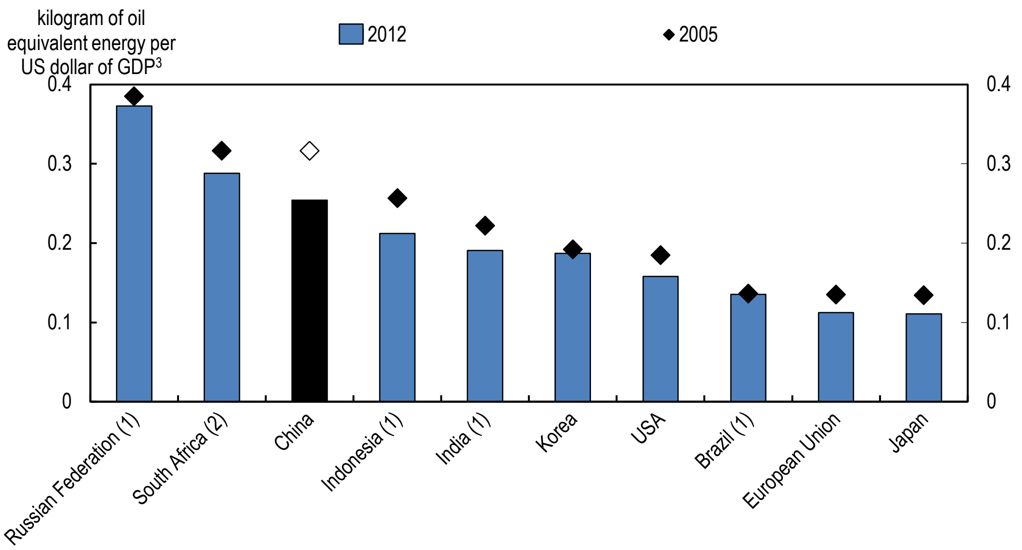
GREEN GROWTH

STATE-OF-PLAY

The "Green Development" section of China's 12th Five Year Plan (FYP, 2011-2015) is a manifestation of the country's aspiration to move towards a greener economy. The "Green Development" theme has identified six strategic pillars: climate change, resource saving and management, circular economy, environmental protection, ecosystem protection and recovery, water conservation and natural disaster prevention. These pillars entail several new binding targets, e.g. carbon emission per unit GDP to be reduced by 17% by 2015, NO_x and ammonia nitrogen emissions to be reduced by 10% by 2015, in addition to targets continued from 11th FYP, e.g. energy intensity, SO2 and COD pollution. China thus aims to shift towards a "green, circular, low-carbon economy" and a more sustainable development model by focusing on energy efficiency and environmental protection. Indeed, notable achievements in greening the economy include **improving energy efficiency** as well as curbing some forms of **pollution**.

While China reduced energy use per unit of GDP by 19% between 2006 and 2010, and aims for a further 16% reduction by 2015 (IEA, 2012), energy intensity, still remains higher than in most OECD countries and some other emerging economies (Figure 5.1). Gasoline and electricity prices remain tightly regulated, with preferential pricing schemes for selected industrial users, thereby discouraging energy preservation. Expansion of renewable and nuclear power is being pursued in order to reduce dependence on fossil fuels. China is the largest global investor in **renewable energy,** with investments reaching USD 67 billion in 2012. The government plans to increase the renewable energy share to 20% by 2020. Measures to promote energy-efficient buildings have been introduced, and voluntary green building certification systems of the kind that exist in OECD countries have been developed and scaled up.

Figure 5.1 Energy intensity in China



Notes:

1. 2011;
2. 2010;
3. GDP is measured at constant 2005 prices converted to dollars using the 2005 PPP exchange rate.

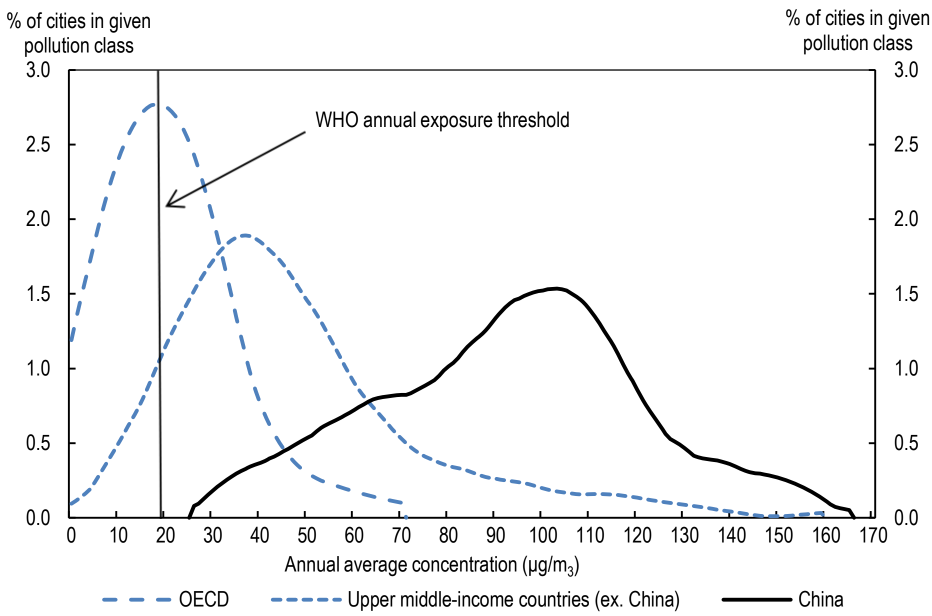
Source: OECD and IEA.

Efforts have been made to reduce local air pollution by setting quantitative targets, retrofitting equipment and increasing standards to levels applied in OECD countries. Monitoring of air pollutants has been widened and results are being made available more transparently (OECD, 2013a). In June 2013, the government pledged USD 275 billion over the next five years to curb emissions and tackle air pollution. As part of its five-year plan, China is considering green growth policies also to reduce poverty through job creation; primarily focused on the forestry sector as a sustainable response to increasing demand for timber (OECD, 2013b). Progress has been also made in **green innovation** with energy generation and efficiency patents accounting for 1.9% of total patents in 2010.

MAIN CHALLENGES

While providing significant opportunities, China's rapid **urbanisation** has also amplified a range of environmental pressures (OECD, 2013c). Air quality is poor in most urban areas due to high concentrations of SO_2, NO_x and PM_{10} and smaller particles several times in excess of the World Health Organisation's limit (Figure 5.2). This results in an increased incidence of respiratory disease in urban populations, particularly in infants and other vulnerable groups. The OECD Environmental Outlook to 2050 projected that the number of premature deaths from exposure to particulate matter would more than double to reach 3.6 million a year globally, with most deaths occurring in China and India. The health impacts of urban air pollution also entail significant economic costs.

Figure 5.2 Percentage of cities with a given ambient concentration of particulate matter[5]



Dependence on fossil fuels, especially the most widely available source, coal, and rising energy demand pose a major challenge to controlling air pollution. **Water pollution** is also exacerbated by water scarcity, with over 40% of inland rivers that make up China's seven main river systems deemed to be unsuitable for human use. These pressures impose significant health impacts and related costs and reduce human well-being. Furthermore, as the poor often suffer disproportionately, addressing environmental concerns through appropriate taxation and transfer schemes can support government efforts to reduce inequality. The most pressing challenge ahead is to commit to market-based pricing and eliminate environmentally harmful subsidies to decouple pollution and other forms of environmental degradation from economic growth (OECD, 2013a). At the same time, improving laws and regulation whilst increasing

[5] Particulate matter are minute pieces of solid or liquid matter suspended in the atmosphere.

environmental and resource constraints requires continuous upgrading of production processes through green innovation (OECD, 2013d).

By international and historical standards the manufacturing share of the economy large, implying that economic activity has focused more on **resource-intensive and heavily-polluting sectors**. Air pollution emissions from energy production and industry reflect China's growing energy demand and its supply structure, which continues to be dominated by coal for electricity production and direct use by industry in furnaces and boilers (OECD, 2013a). A shift towards a more service sector based economy would be beneficial also from an environmental perspective.

Furthermore, although China has a long history of pricing pollution, implementation problems including **weak monitoring and enforcement capacity**, have plagued the pollution levy system. The levies have been too low to provide an incentive for firms to invest in mitigation efforts (OECD, 2013a).

KEY LESSONS FROM THE OECD'S WORK

- Greening the economy needs concerted efforts and a balanced policy approach. Generally, an agenda for action on green growth in developing countries follows a three step approach. First, a **common vision** of green growth is needed and green growth-related objectives should be integrated into national development plans and budgets. Second, **policies specifically aimed at greening growth**, especially those related to investment, innovation and R&D, labour and skills development, fiscal structures and regulations, and climate change adaptation and resilience should be implemented. Finally, **institutional and governance capacity** should be developed to effectively implement wide-ranging policy reforms and measure progress (OECD, 2013a).

- **Better pricing of energy, water and other natural resources** can help improve resource efficiency and reduce pollution. As pricing arrangements are often motivated by equity considerations, reforms in this area need to offset any distributional consequences, e.g., by recycling fiscal windfalls back to households. Pricing water for green growth, for example, works best when based on a reliable understanding of how farmers and households (among other water users) react to different price signals.

- **Pricing pollutants either through taxes or levies,** or by introducing an **emissions trading scheme** (ETS), offers an economically attractive approach to help meet green growth policy objectives (OECD, 2011). Instruments for pricing carbon and other pollutants, notably SO_2, are well established in a number of countries (OECD, 2013a).

- **Water management** can contribute to green growth in several ways (see OECD, forthcoming 2013e). Four opportunities deserve particular attention: i) improvements in water allocation regimes; ii) attention to the development of water management arrangements that incentivise innovation and enhance water-use efficiency; iii) investment in environment-friendly water infrastructure (wetlands, flood plains, small scale dams, and groundwater recharge areas; in urban contexts: demand management, rainwater harvesting, sustainable urban drainage) that enhances water security in the face of uncertainty and mounting water-related risks; and iv) the provision of affordable access to water supply and sanitation to all.

- Market-based reforms need to be complemented by **strong environmental standards and sound urban planning**. International evidence underscores the many environmental advantages of well-planned **compact cities**, such as greater energy efficiency, better use of land resources and lower pollution from transport (OECD, 2012).

- An **integrated approach to green investment** policy can help governments create and improve the enabling conditions to catalyse and scale-up the private sector investments needed to achieve green growth objectives. For instance, well-designed water entitlements can stimulate investment from irrigators in water saving technologies, freeing water for other uses.

- Along with infrastructure, **innovation** is a key factor in the transition to a low-carbon, resource-efficient economy. A systematic approach to green innovation is desirable, as innovation of multiple aspects of systems can be more effective than a focus on isolated technologies. Water-related innovation can derive from dedicated policies, but also from well-designed allocation regimes; lessons can be learned from international experience.

- **Labour and skills development** policies can support green growth objectives by equipping workers for a more smooth transition from activities that undermine natural assets to those that manage them sustainably, hence boosting productivity, employment and development.

Selected policy recommendations for China

- **Further improve energy, water and other natural resource use efficiency**: Increase excise duties on gasoline and other petroleum products to include negative externalities associated with greenhouse gas emissions and pollution in end-user prices. Complete reforms to deregulate prices to allow full pass-through of changes in international oil prices. Following the conclusion of pilot schemes for market-based natural gas pricing, extend arrangements nationally and move to full market-based pricing of coal. Reform prices in the power generation sector to better reflect costs. Avoid preferential electricity pricing for selected industrial users. For irrigation and domestic water uses, assess how users react to alternative price structures and levels. Design targeted accompanying measures to ease transition and address affordability issues.

- **Strengthen pollution price signals**: Ensure effective implementation of CO_2 pilot emissions trading schemes, and use this as a basis for developing a coherent national approach to carbon pricing, either by establishing a national emissions trading scheme or by implementing a **carbon tax**. Implement measures to reduce pollution from motor vehicle use, including taxing transport fuels, linking taxation of vehicles to their environmental performance, and implementing congestion charges (rather than license plate rationing).

- **Provide appropriate support for renewable energy investment**: Address supply bottlenecks with wind and solar energy and continue to promote improved investment coordination and grid connectivity, while expanding suitable investment and financing vehicles. This requires continuous R&D support in clean technologies and appropriate framework conditions to introduce greener and more efficient infrastructure to support green growth and sustainable development.

- **Raise environmental standards and improve enforcement and implementation**: Continue to improve national standards for motor vehicles and fuels, especially regarding sulphur content, by extending high standards in leading cities across the country. Establish targets for a broader range of environmental objectives, including additional air and water pollutants. Continue to ensure that provincial and local governments are held responsible for achieving environmental objectives. Improve national data collection and dissemination of all major pollutants, including particulates, CO2 and other greenhouse gases. Strengthen nuclear energy safety, notably by increasing regulatory capacity to keep pace with rising nuclear energy investment, by updating the regulatory framework to provide clearer accountability, and by ensuring that regulatory authorities have direct access to the highest levels of government.

- Assess water allocation regimes, with regards to their capacity to allocate water in line with development strategies, and to stimulate innovation and investment. International experience gathered by the OECD can help.

- **Coordinate actions** across ministries, public agencies and also between levels of governments involved in policymaking, and address issues of uneven stringency of enforcement of environmental policies and laws at the provincial and local levels. Urban water management deserves particular attention, as it cuts across administrative boundaries and sectoral policies.

- As part of the broader reform effort needed to rebalance the structure of the Chinese economy, **expand labour-intensive services sectors** to increase employment in less polluting and energy-intensive industries over the medium term where the benefits of such programmes exceed the costs.

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OECD'S WORK ON GREEN GROWTH

At the OECD Ministerial Council Meeting in June 2009, Ministers asked the OECD to develop a Green Growth Strategy. In support of the global agenda on green growth, the OECD presented a green growth policy framework to Ministers in May 2011. "Towards Green Growth" (OECD, 2011) and "Tools for Delivering Green Growth" (OECD, 2011) provide a practical framework for governments in developed and developing countries to seize opportunities that arise when the economy and the environment work together. The OECD is mainstreaming green growth in its national and multilateral policy surveillance exercises and in sector- and issue-specific work that cover key areas such as energy (jointly with the IEA), food and agriculture, innovation, green investment, greening industry, jobs, biodiversity, water and rural development. As solid monitoring and evaluation frameworks are essential to mainstream green growth, work has also concentrated on advancing the measurement agenda, including by developing methods for computing new and improved indicators. The focus of the analytical work is on greening multifactor productivity measure, natural resource use index, and shadow prices. Countries like the Czech Republic, Denmark, Germany, Korea, the Netherlands and the Slovak Republic have already applied and adjusted the OECD green growth measurement framework, and cooperation is underway with several developing and transition countries. The Green Growth Indicators Database brings together all data needed for calculating the OECD's green growth indicators and contains selected indicators to support economic and environmental policy analysis for monitoring progress towards green growth.

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CLIMATE CHANGE

STATE-OF-PLAY

One of the main policy priorities in China is to tackle the adverse impacts of climate change on human well-being. The 12th Five-Year Plan (FYP) (2011-2015) underscores the importance of climate change and integrates measures for addressing it into the country's mid-term and long-term plans for economic and social development. The FYP sets binding targets to reduce energy consumption per unit of GDP by 16%, cut CO_2 emissions per unit of GDP by 17%, and raise the proportion of non-fossil fuels in the overall primary energy mix to 11.4%. It defines the objectives, tasks and policy orientation of China's response to climate change over the five year period and identifies key tasks, including controlling greenhouse gas (GHG) emissions, adapting to climate change, and strengthening international cooperation. The mix of mitigation and adaptation measures put in place in recent years has resulted in curbing some forms of pollution and promoting energy efficiency improvements.

Gradually, **price liberalisation** has promoted convergence between domestic and international energy prices. This is especially the case for coal since the mid-2000s, when the government allowed domestic prices to move up sharply in line with international prices. **Renewable energy investments** increased at an impressive pace, with China leading in this area together with the US. Installed wind capacity has risen from almost zero in the early 2000s to the world's largest. Photovoltaic and other solar capacity has also reached an impressive level, with China accounting for half of world capacity by 2009. The government aims to obtain 20% of its energy from such sources by 2020.

China is also one of the leaders amongst the non-Annex I group of countries in developing plans to establish GHG emissions trading markets. Seven **pilot carbon-trading programmes** are scheduled to start in 2013, with the first in Shenzhen recently underway. This will be followed by Beijing, Shanghai, Guangdong, Tianjin, Chongqing and Hubei. Together they are set to regulate 800 million to 1 billion tons of emissions, approximately one half the size of Europe's cap-and-trade programme.

In the transport sector, motor vehicle ownership rates in China remain low by international standards but have been rising rapidly. The government has adopted measures to control motor vehicle energy consumption and associated pollution emissions.

The government has also decided to implement policies at the city level. One example is government plans for building **low-carbon pilot cities**, which has become a priority for China in light of urbanization trends. Since 2010, the government has decided to establish low-carbon pilot provinces and cities, including 5 provinces and 8 cities in the first stage, and 1 province and 28 cities in the second stage.

Climate change adaptation is also a priority. China is already being affected by climate variability and this will vulnerability will increase as a result of climate change. Since 2011, the country has been hit by a string of extreme weather and climate events (droughts, freezing temperatures, floods). These events have adversely affected China's economic and social development, imposing high costs in human and financial terms. A range of sectoral measures are being developed to reduce current and future vulnerability. For example, to counter the environmental risks of desertification and flooding, the government launched a series of major reforestation projects (the largest such programmes in the world).

MAIN CHALLENGES

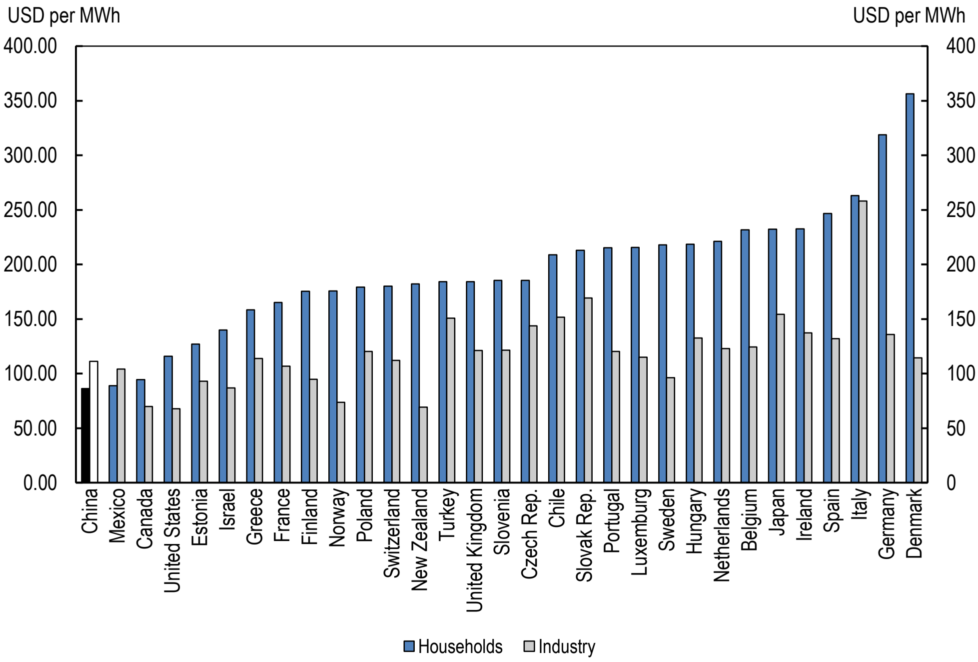
In spite of their partial decoupling from GDP growth in recent years, China's CO_2 emissions continue to grow. China is in the midst of a period of **rapid urbanisation,** and this trend is likely to continue through 2030 and beyond. Since the mid-1970s, the urban population has more than tripled, from around 200 million in 1980 to almost 690 million in 2010. As China continues to improve its income levels, it is expected that the urbanisation rate will continue to rise, further increasing pressure on GHG emissions. Rising income levels and limited public transport infrastructure have led to a massive increase in the use of private vehicles and a decline in the rate of bicycle use, resulting in increased GHG emissions and serious traffic congestion in the urban centers (Ang & Marchal 2013; OECD 2013b).

Furthermore, although China has a long history of pricing pollution, implementation problems including **weak monitoring and enforcement capacity**, have plagued the pollution levy system. The levies have, moreover, been too low to provide an incentive for firms to invest in mitigation efforts. The newly established pilot CO_2 emissions trading schemes in seven sub-national jurisdictions are also faced with administrative challenges. For instance, the prohibition of trading between the schemes makes it impossible for the government to identify any problems it may encounter in moving towards a unified national system in the future (OECD, 2013a).

In contrast to developments in the coal and oil sector, little progress has been made in **reforming natural gas pricing or the electricity sector** since the early 2000s. On average, electricity prices faced by industrial users in China are not unusual compared with many OECD countries but household prices are much lower (Figure 6.1). In reforming the pricing system, distributive implications are particularly relevant and should be addressed. The 12th FYP highlights market mechanisms as a tool to control pollution and carbon pricing is an element of the longer-term strategy to mitigate GHG emissions and meet international climate change obligations.

Figure 6.1 International household and industrial electricity prices

(2011)



Source: *IEA*

KEY LESSONS FROM THE OECD'S WORK

- Set clear, credible, stringent and economy-wide **GHG mitigation targets** to guide policy and investment decisions. Participation of all major emission sources, sectors and countries would reduce the costs of mitigation and help to address potential leakage and competitiveness concerns (OECD, 2012).
- Use market-based instruments such as emission trading schemes or carbon taxes to **put a price on carbon.** These can provide a dynamic incentive for innovation, technological change and driving private finance towards low-carbon, climate resilient investments. These instruments can also generate revenue to ease tight government budgets and potentially provide new sources of public funds (e.g. if allowances in the emissions trading scheme were to be auctioned) (OECD, 2012).

- **Reform fossil fuel support policies** in order to curb GHG emissions, provide incentives for increased energy efficiency and renewable energy and also increase public finance for climate action. However, fossil fuel subsidy reforms should be implemented while carefully addressing its distributive effects on households through appropriate measures.
- **Foster innovation and support new clean technologies** which would reduce the cost of mitigation significantly. For example, emerging technologies – such as bioenergy from waste biomass or combined with CCS – have the potential to absorb carbon from the atmosphere. Bringing these technologies to commercial fruition, and finding new ones, will require a clear price on carbon, targeted government-funded R&D, and policies to reduce the financial risks (OECD, 2012).
- Carbon pricing and support for innovation are not enough to ensure all energy-efficiency options are adopted or accessible. Additional targeted **regulatory instruments** (such as fuel, vehicle and building-efficiency standards) are also required. When designed to overcome market barriers and avoid costly overlap with market-based instruments, they will accelerate the uptake of clean technologies, encourage innovation and reduce emissions cost-effectively.
- The **net contribution of the policy instrument "mix"** (i.e., regulatory, market-based, and other voluntary/information instruments) to social welfare, environmental effectiveness and economic efficiency should be regularly reviewed (OECD, 2012).
- **Develop a national adaptation strategy.** Climate change will affect all sectors, exacerbating existing pressures and creating new challenges. National adaptation strategies can facilitate action within each sector, and coordination to address cross-sectoral challenges (Mullan et al, 2013).

SELECTED POLICY RECOMMENDATIONS FOR CHINA

- **Strengthen carbon price signals:** China's development of its pilot emissions trading systems is to be commended. It is important that effective implementation of these schemes is encouraged and that regular review and assessment is undertaken. Lessons learned should be incorporated in the move towards national carbon pricing.
- **Improve energy efficiency through reform of energy pricing:** Increase excise duties on gasoline and other petroleum products to include negative externalities associated with greenhouse gas emission and pollution in end-user prices. Complete reforms to deregulate prices to allow full pass-through of changes in international oil prices. Following the conclusion of pilot schemes for market-based natural gas pricing, extend arrangements nationally and move to full market-based pricing of coal. Reform prices in the power generation sector to better reflect costs including carbon and other pollution pricing; this could be important if emissions trading at the national level is to be successful. Avoid preferential electricity pricing for selected industrial users. Experiment with the separation of transmission and distribution of electricity with a view to moving towards price deregulation (OECD 2013c). In doing so pay attention to distributional consequences and where necessary support poorer households by providing financial assistance through the minimum living allowance or direct transfers. In rural areas continue to encourage the formation of local water markets.
- **Raise environmental standards and improve enforcement and implementation:** Continue to improve national standards for motor vehicles and fuels, including for GHG emission levels, by extending high standards in leading cities across the country. Gradually phase in still stronger vehicle standards in line with technological advances and international best practice. Continue to phase out old and inefficient technologies, for example used in small and inefficient coal-fired power stations. Improve national data collection and dissemination of all major pollutants including CO_2 and other GHGs.
- **Provide appropriate support for renewable energy investment:** Continue to provide incentives for renewable energy deployment (e.g. through preferential tariffs) at a

level consistent with carbon reduction and other environmental goals until effective national CO_2 pricing is established and the pollution levy system strengthened. Address supply bottlenecks and grid connection problems related to wind and solar energy and continue to promote improved investment co-ordination and grid connectivity.

- **Develop a policy framework conducive to private sector investment in low-carbon transport**. Set long term goals and align policy goals across and within levels of government. Reform policies to enable private sector investment and strengthen market incentives. Develop innovative financial mechanisms at the local level to finance public transportation systems (green bonds). Harness and scale-up resources that increase the social returns for private investment (e.g. training and R&D).
- Establish practices that promote green business and consumer behaviour, such as information and education policies.
- Further scale-up **adaptation policies**, ensuring they are efficient and effective, including via ecosystem-based adaptation measures.

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OECD'S WORK ON CLIMATE CHANGE

The OECD has been working on climate change economics and policy since the late 1980s. The OECD works closely with governments to assist them to:

- Identify and implement least-cost policies to reduce greenhouse gas emissions in order to limit climate change,
- Integrate adaptation to climate change into all relevant sectors and policy areas
- Promote good practice to scale up and better target public and private finance to support climate-friendly investment, including institutional investors.

Key areas of work include carbon markets; climate finance; monitoring, reporting and verification; adaptation; cities; and climate and development. For further information on OECD work on climate change, see: http://www.oecd.org/env/cc/

FURTHER READING ON CLIMATE CHANGE

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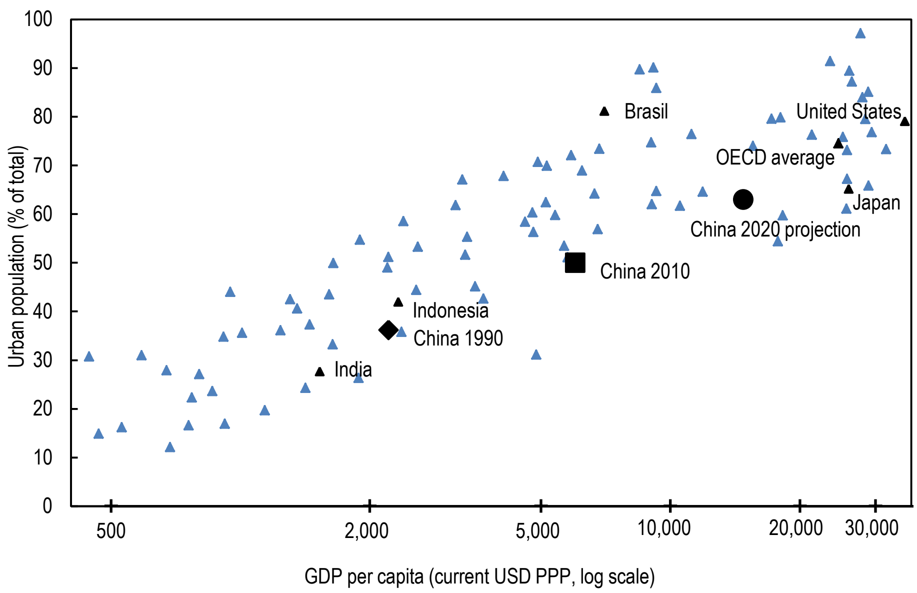
URBANISATION AND SUSTAINABLE DEVELOPMENT

STATE-OF-PLAY

Urbanisation has been and will remain a powerful driver of growth and social change in China and therefore features prominently in the 12th Five Year Plan. Cities have expanded mainly via migration away from rural areas. Labour has thus been reallocated out of agriculture into higher-productivity sectors, and urban concentration has delivered agglomeration benefits. In the process, living standards have improved rapidly: close to one quarter of China's population now lives in areas where income per head is at least as high as in Chile, Mexico or Turkey (see OECD, 2013; Figure 7.1). At the same time, the migration of underemployed farmers to urban areas and their remittances have lifted per capita income in rural areas enough to narrow the rural-urban income gap over the past decade.

Figure 7.1 Urbanisation has been progressing rapidly but remains below similarly countries

(all countries with populations over 15 million)



Source: OECD (2013)

MAIN CHALLENGES

While urbanisation brings considerable benefits, it also entails costs (see OECD and CDRF, 2010). One relates to congestion: the development of public transport infrastructure, while impressive, has not kept up with urbanisation. Cities also regroup numerous industries and generate more trips than rural areas, with deleterious effects on air quality. However, larger cities need not be more polluted than smaller ones. In fact, compact cities can help reduce automobile dependence and allow for more efficient energy generation and use (see OECD, 2012), while carbon pricing, congestion charges and regulation can help address environmental concerns. Also, given many Chinese cities' acute water supply problems, pricing (switching from abstraction to consumption) and technical measures (water metering, saving, and reuse) need to play a greater role.

Demand for living space has increased with GDP per capita, though less than in other East Asian countries, reflecting the massive migration towards cities in China and migrants' lower demand for floor space. Demand for industrial space has also risen, not least with the proliferation of development zones and industrial parks. Concomitantly, population density has declined in a number of major urban areas – often from extremely high levels. Housing investment took off in the early 1990s, as land-use rights became marketable. The sale of these rights by specialised agencies set up by the local authorities amounted to over 7% of GDP in 2010, but only a small part of this represented revenue for the local authorities. The use of the remainder often remains opaque and compensation payments for expropriated land shown in official statistics far exceed the amounts received by farmers. In any event, local governments need to guard against the rapid build-up of off-budget debt and to diversify their revenue streams, notably via higher taxation of property holdings (Wang and Herd, 2013).

Around 275 million rural migrants lived in urban areas in 2010 – one fifth of China's total population. Most have no official registration (*hukou*) in their place of residence. Hence, they do not enjoy the same social entitlements as local *hukou* holders, nor do their families, even if the rules governing migrants' access to schools, health care and other social services have begun to be relaxed in a number of cities (notably in Shanghai). Progress has been more modest as to access to senior secondary school and university, where registration remains a barrier. As regards health insurance, it is very difficult for migrant families to cover their children, whose health is markedly worse.

Against this backdrop, the central government has pushed for *hukou* reform. Modalities vary enormously across cities, but overall the uptake seems to be rather limited, owing to the associated conditions. As a result few of those who have migrated to cities have been able to change their registration status from their place of origin to their new residence. Many would anyhow choose not to do so because a change involves sacrificing potentially valuable land and given that they move to another place if favourable opportunities arise. Thus, the best way forward would be to further delink the eligibility for urban public services from the *hukou* status, for example by granting resident migrants a residence permit with the same rights as those of local urban *hukou* holders (as done in Suzhou prefecture). The cost of such a policy is declining as access to education is broadening rapidly.

Continued urbanisation is held back by rigid central planning rules governing the conversion of designated cropland into construction land, which partly reflect food security concerns. This will likely put pressure on land prices in the coming years and encourage illegal construction. A major change in land ownership rules in rural areas is needed to allow famers and their collectives to obtain land-use rights enabling them to change the use of their land to construction.

Key lessons from OECD and partner countries

- All cities have potential for growth and it has been documented that medium cities can have more dynamic growth patterns in relative terms compared to larger cities (Kamal-Chaoui, L. and J. Sanchez-Reaza, 2012; OECD, 2013). Governments cannot afford to spare the growth potential of middle and smaller cities and the contribution that they can have to national growth.

- Economic growth in urban areas is driven by internal factors such as human capital, physical capital, including infrastructure, and innovation, but also by spatial factors such as agglomeration economies and proximity to markets. Using a number of econometric techniques, the OECD has developed a regional economic growth model that takes into account endogenous factors and new economic geography elements (OECD, 2009). The most robust factor for growth is the presence of high skilled workers as well as small numbers of workers with low skills, which can be an impediment for growth. Infrastructure can have an impact if other factors such as human capital and innovation are also in place. Other factors that contribute to growth include agglomeration in the services sectors, particularly financial intermediation, accessibility to markets and low employment rates.

- Higher densities alone are no guarantee for increased quality of life, and, on the contrary, can have undesirable consequences, such as increased congestion, parking shortages, insufficient open space and overall reduced quality of life. Instead, when linked to urban transit networks and made accessible to local services and jobs, densification strategies can be part of a “compact city” policy package that makes more efficient use of land, generates adequate demand to support more sophisticated transit systems (such as bus rapid transit (BRT) or light rail), improves access to jobs and services, with the potential to improve the overall quality of life. Compact urban form is correlated with economic, environmental and social benefits. Economic benefits take the form of increased labour productivity, reduced infrastructure costs, and more efficient use of land resources. Environmental benefits include lower air pollution and CO2 emissions from transport, reduced transport energy consumption, and conservation of farmland and ecosystems. Social benefits include greater access to services and improved health outcomes.

- Strengthening sub-national capacities holds potential for improving the efficiency and effectiveness of public investment. Fifteen capacities have been identified as integral to sound design and implementation of public investment. These capacities relate to the various stages of the investment cycle, from planning to post-completion review. In some instances, strengthening capacity may improve the quality of the investment choices (i.e. more growth-oriented, better tailored to sub-national specificities as a result of enhanced strategic planning efforts or more rigorous ex-ante appraisal). In other cases, capacity development may lead to efficiency gains as sub-national governments tap unexploited economies of scale or reduce costs.
- It is generally agreed that sub-central governments should rely on taxes levied on assets that are relatively immobile (e.g. property taxes based on possession rather than transactions) and relatively stable.

Selected policy recommendations for China

- Implement and closely monitor the effectiveness of the measures taken to deal with the off-budget liabilities of local government financing platforms and to prevent their further build-up.
- Abandon the annual quota for the conversion of agricultural land and the national floor on agricultural land. Replace them by a locally-determined master plan that takes into account the need to lower housing prices at the fringes of larger cities.
- Further develop subway systems in large cities, and Bus Rapid Transit systems in smaller cities.
- Ensure that a much higher proportion of the development value of agricultural land accrues to farmers. Give greater legal certainty to the property development undertaken on collectively-owned “village” land located in urban or peri-urban areas.
- Make the expenditures funded by land sales more transparent, both as far as the cost of redevelopment is concerned and with respect to the final destination of compensation payments.
- Extend the land-use rights of farmers to allow – subject to zoning and planning requirements – the sale, renting and mortgaging of their rights, which should be lengthened to 70 years to allow the development of larger farms.
- Switch from taxing land transactions to taxing land possession, while keeping the overall property tax burden broadly unchanged.
- Disconnect the provision of local services from the possession of a local *hukou*.
- Increase the subsidies to private schools that provide education to migrant children. Allow migrants to enroll in high schools in their place of residence instead of their place of registration.
- Allow the university entrance examination to be taken in the place of residence and abolish local quotas for entrance to university.

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OECD'S WORK ON URBAN DEVELOPMENT

Urban issues are increasingly prominent on national policy agendas. Cities and metropolitan areas are major contributors to national economies and play a key role in global markets. Moreover, at a time of deepening globalisation and increasing international competition for investment, metropolitan regions have become the targets of a wide range of public interventions. As a result, throughout the OECD, urban development policies seek to address a range of issues – from managing urban expansion and congestion to fostering competitiveness, innovation, social inclusion and environmental sustainability. As a key international forum for discussion and knowledge exchange, the OECD works with mayors, regional leaders and national public officials responsible for urban and regional policies. The Urban Programme at the OECD undertakes comparative and thematic reports as well as cross-country analysis of the evolution of urban policy and governance. This permits direct comparison of urban policy innovations across OECD countries, leading to recommendations and the identification of good practices at the city, regional and national level. The Urban Programme's work is nourished by the OECD Metropolitan Database and other statistics on urban regions, as well as international exchange in urban strategy, policy, finance and investment, and public service delivery through high level events and publications.

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