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## POTENTIAL EMPLOYMENT EFFECTS OF A GLOBAL REBALANCING

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### A. Introduction

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There is widespread agreement that the persistently large imbalances in the world economy – with sizeable current-account deficits in some countries, particularly the United States, and sizeable current-account surpluses in others, notably China, Germany, Japan and a number of oil-exporting countries – contributed to the outbreak of the current economic and financial crisis and facilitated its global spread (see also *TDR 2009*, chap. I). There is also agreement that a smooth and non-deflationary reduction of these imbalances is indispensable for ensuring that the recent global economic upturn continues. This chapter focuses on the effects of global rebalancing on the patterns of global demand and trade flows.

Although the United States accounted for about 50 per cent of the aggregate current-account deficits in the world economy, and China for about 22 per cent of all surpluses in pre-crisis 2007, the global imbalances are far from being just a bilateral problem between the United States and China. China began to show a strong current-account surplus only from 2003 (Yu, 2007); prior to that the main counterparts to the United States' long-standing current-account deficit were surpluses in Germany and Japan. However, while so far there is little evidence that adjustments in the two countries would be able to help bring about a global rebalancing, in the United States there appears

no alternative to adjusting household consumption unless another asset bubble is allowed to occur, and in China, the need to embark on major structural transformation from investment- and export-led growth to consumer-led growth has been officially recognized.<sup>1</sup> It is against this background that this chapter concentrates on adjustments in the United States and China to illustrate the effects of rebalancing on international trade flows and employment.<sup>2</sup>

The recent growth trajectories of the United States and China appear to have moved in opposite directions. Consumption as a share of gross domestic product (GDP) increased in the United States but fell in China; investment rose dramatically in China while its importance shrunk in the United States. Thus the United States current-account deficit has been associated with a low national savings rate and a continuously rising share of private consumption in GDP, while along with China's current-account surplus there has been a very high national savings rate and a very low share of household consumption in GDP. However, the external position of neither of these two countries is sustainable.

A correction of the current-account imbalances and – their mirror image – the savings-investment disequilibria in both countries will affect the entire

world economy. One reason for this is, of course, the large size of these two economies. But equally important for the overall outcome is the big difference in their levels of per capita income, since the level and structure of world trade is influenced by the relative importance of rich and poor countries in global economic growth. As long as per capita income growth in rich countries drives global growth, their demand patterns will largely determine global trade patterns: given their already high levels of industrialization and per capita incomes, growing demand in these countries will be directed more at non-tradable services and manufactured consumer goods, whereas industrial raw materials, energy and food products will feature more prominently in the demand patterns of rapidly industrializing developing countries. Thus, if the latter assume greater weight in the world economy, the resulting changes in the pattern of global demand growth are likely to influence the trends in commodity prices and terms of trade. This, in turn, will guide investment decisions and lead to changes in the sectoral focus of investment, productivity, output and employment growth.

Major developments in the global economy since the beginning of this millennium may well have strongly influenced sectoral output growth and employment in developing countries. The three main developments were: the decline in national savings and the rapid increase in household consumption in the United States; the growing importance of investment and exports for growth in large Asian developing countries, particularly China; and the unprecedented surge in the prices of primary commodities after 2002. In particular, the rapid growth of consumer demand in the United States provided a growing market for manufactured exports from the industrializing developing countries. The consequent rapid industrialization in these countries, in turn, provided export opportunities for primary commodities from other developing countries. The overall expansionary nature of these three developments contributed to sustained output growth in the world economy for several years, making it easier to

combine productivity-enhancing investment with a general expansion of employment.

This overall favourable external economic environment, combined with judicious policies, also allowed some developing countries to emerge as drivers of global growth, thereby, at least temporarily, reversing the previously observed divergence of economic performance between the industrialized and developing countries. It is now widely accepted that in order to recreate a favourable external environment for development, the challenge for policymakers is to achieve a non-deflationary and durable rebalancing of

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A non-deflationary reduction  
of global imbalances is  
indispensable for the global  
recovery to continue.

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demand in the world economy. Such rebalancing will probably have to include a decline in the share of consumption in aggregate income in the United States and an increase in that share in China. Such a process of global rebalancing will undoubtedly cause a change in both the level and composition of international trade, with implications for

structural change and employment in all countries. This chapter analyses these implications, for the demand side and for employment.

The chapter first discusses issues related to developments in the United States, where they are crisis-related (section B), before addressing developments in China (section C), where they are more closely associated with a gradual shift in the sectoral composition of output and employment. This discussion is followed by a simulation of the likely effects of rebalancing in the United States and China on global trade flows and sectoral employment shifts (section D). The results of this simulation suggest that such rebalancing in these two countries alone will not be sufficient to bring about an unwinding of global imbalances in a non-deflationary manner. Section E draws policy conclusions, stressing that for global rebalancing to occur in conjunction with sustained economic growth, adjustments in the level of composition of demand will also be necessary in other major economies and that developing countries may be well advised to take these global changes into account when defining or revising their post-crisis strategies to raise output growth and employment.

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## B. Rebalancing growth in the United States

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### 1. Relationship between the current-account balance and consumer demand in the United States

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While there are different views on the causes and effects of global imbalances, there can be little doubt that the saving and consumption patterns of United States households have been a key determinant of those imbalances.

A decomposition of the national income and product accounts in the savings-investment balance, with the components of net national savings disaggregated, highlights the secular decline in the United States household savings rate since the beginning of the 1980s, with a particularly sharp drop around the year 2000 (chart 2.1). It also indicates that the pattern of the United States current account from 1992 onwards correlates with that of household savings rather than government savings.<sup>3</sup> In the second half of the 1990s, a sizeable improvement of the government's fiscal position prevented the fall in the household savings rate from reducing overall national savings. The increase in public savings was matched by an equal increase in private investment, linked to the information and communications technology boom and to related expectations of more rapid productivity growth. This situation changed radically in 2001. From 2001 to 2003, investment fell sharply. Meanwhile, the deterioration in the United States

budget deficit over the same period reduced national savings. Given that the increase in fiscal deficits and continued fall in household savings exceeded the fall in investment, the United States current-account deficit remained high.

The decline in the United States household savings rate went hand in hand with a rapid expansion of private consumption. Since the late 1990s, the share of personal consumption in GDP has considerably exceeded its average long-term trend of about 66 per cent, reaching a peak in early 2009, when it accounted for 71 per cent of GDP (chart 2.2).

More importantly, the increase in United States household consumption was largely debt financed.

Facilitated by easy consumer credit, lax lending standards, a proliferation of exotic mortgage products, the growth of a global market for securitized loans and soaring house values, burgeoning household spending created strongly growing household debt and led to a sharp decline in the United States household savings rate to almost zero.<sup>4</sup> The ratio of debt to personal disposable

income reached an all-time high in 2007, exceeding 130 per cent. As a result, household leverage was 27 percentage points above where it would have been had it maintained its 1975–2000 trend (chart 2.3). This difference, which corresponds to about \$2.8 trillion, indicates the potential magnitude of United States household deleveraging that could be achieved through debt reduction and increased savings.

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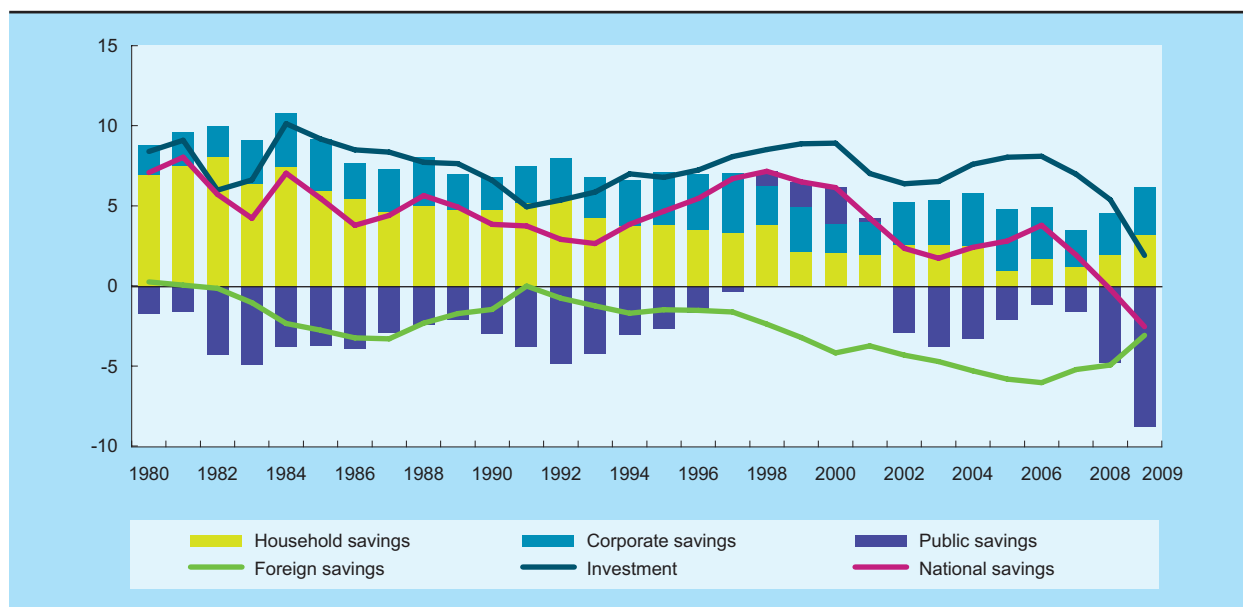
**The increase in household consumption in the United States was unsustainable because it was not supported by a similar expansion of labour compensation.**

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Chart 2.1

## NET SAVINGS AND INVESTMENT BALANCES IN THE UNITED STATES, 1980–2009

(Per cent of GDP)

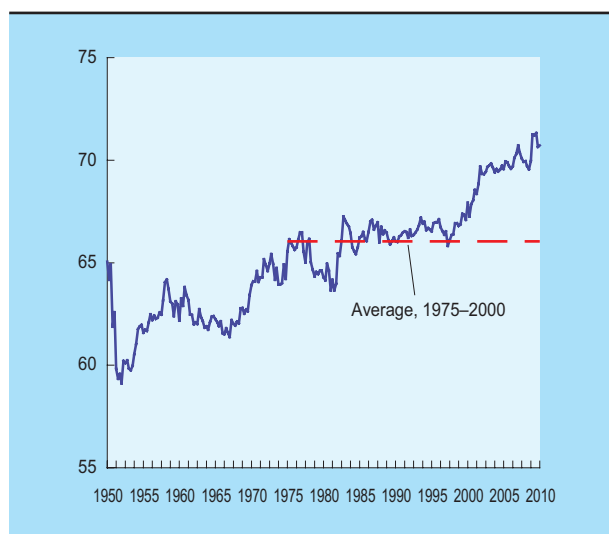


Source: UNCTAD secretariat calculations, based on the United States Bureau of Economic Analysis database.

Chart 2.2

## PERSONAL CONSUMPTION IN THE UNITED STATES, 1950–2010

(Per cent of GDP)



Source: UNCTAD secretariat calculations, based on the United States Bureau of Economic Analysis database.

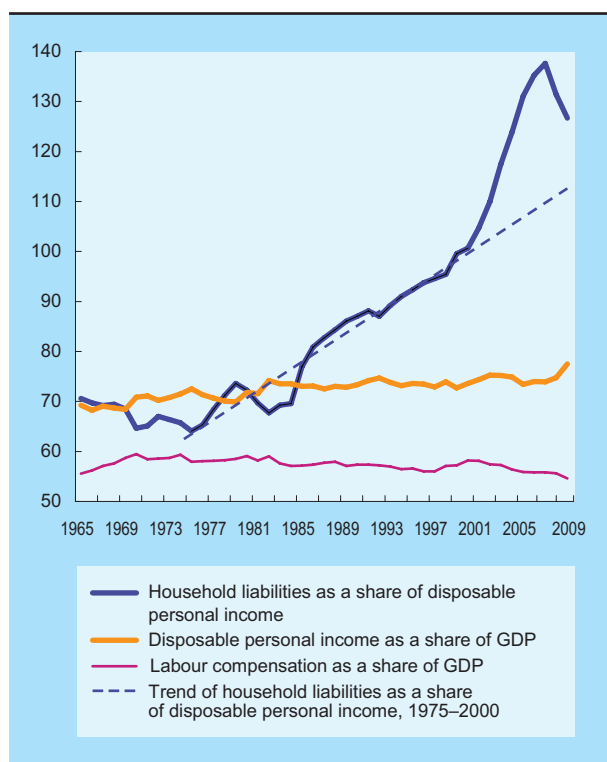
Note: Data for 2010 refer to the first quarter.

The increase in private consumption was unsustainable because it was not supported by a similar expansion of labour compensation in the private sector. Compared to previous upswings, the economic expansion that ended with the onset of the current crisis had been characterized by a low increase in employment – a phenomenon sometimes referred to as “jobless growth” – and by the relative stagnation of real wages. As a result, private sector labour compensation grew at an unusually sluggish pace and fell short by more than \$800 billion (in real terms) relative to the trajectory of the previous four business cycles (Roach, 2009: 14). Low- and middle-income households that intended to maintain their relative standards of consumption thus turned from income- to debt-financed expenditure. While the share of consumer credit in disposable personal income oscillated around an average of about 18 per cent between the mid-1960s and the mid-1990s, it reached a peak of over 25 per cent in the 2000s due to an average annual rate of growth of consumer credit of 8 per cent between 1992 and 2006 (Barba and Pivetti, 2009: 115). Low interest rates, asset price inflation (first for equities and then for housing) and financial deregulation were responsible for this shift

Chart 2.3

**HOUSEHOLD LIABILITIES, DISPOSABLE PERSONAL INCOME AND LABOUR COMPENSATION IN THE UNITED STATES, 1965–2009**

(Per cent)



**Source:** UNCTAD secretariat calculations, based on the United States Federal Reserve, *Flow of Funds* database (tables B100, F6 and F7).

**Note:** Data for 2009 are preliminary.

from wage to non-wage income (i.e. income from property and government transfers) and loans as the sources of purchasing power, used increasingly by low- and middle-income households. Resort to non-wage income allowed households to maintain the share of disposable personal income in GDP at around 74 per cent, despite the long-term decline in the share of labour compensation in GDP since the early 1980s (interrupted by only a brief upswing in the late 1990s) (chart 2.3). Efforts to maintain relative standards of consumption, despite sluggish growth in labour compensation, led many households to lower their savings or increase their debts, causing a marked fall in the household savings rate.<sup>5</sup>

In the final two quarters of 2008, real personal consumption expenditure fell sharply, marking a

departure from the trend of a steady increase in the consumption rate since the 1980s. Thereafter, it picked up again, but this is most likely due to the one-off effects of transfers related to various government programmes such as the “cash-for-clunkers” programme, food stamps and extended unemployment benefits, as well as tax cuts. This suggests the recovery is only temporary. Indeed, there is good reason to believe that the decline in household consumption as a share of GDP has only just begun. It has fallen by only about one percentage point from its peak of 71.5 per cent – still more than five percentage points above its pre-bubble average of 66 per cent during the period 1975–2000. This fall corresponds to only about 20 per cent of the shift that would take household consumption as a share of GDP back to the historic average. The decline in asset prices and the associated wealth effects for households, a sharp tightening of credit availability and a large increase in unemployment risk are widely expected to have a lasting downward impact on household spending. According to recent estimates (Lee, Rabanal and Sandri, 2010: 3), the current changes in the respective shares of household consumption and savings in total income are likely to settle at the levels of the early 1990s, which “implies a significantly lower share of private sector demand in GDP by about 3 percentage points compared to the pre-crisis (2003–2007) average”.<sup>6</sup>

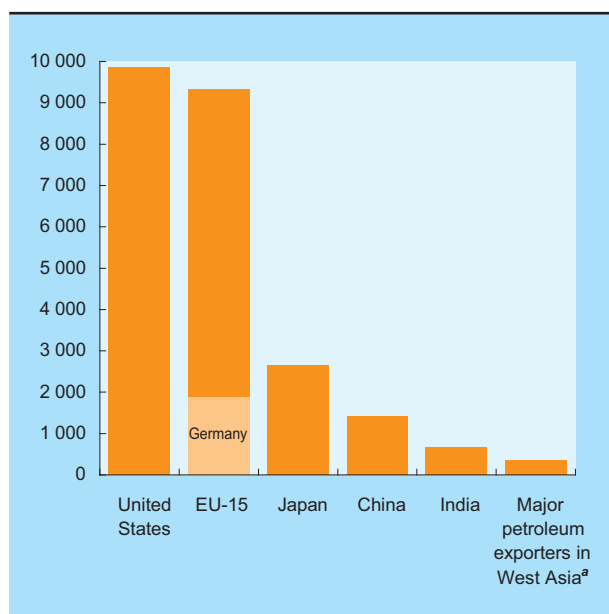
## 2. United States consumption spending and imports

Buoyant consumer demand in the United States was the main driver of global economic growth for many years in the run-up to the current global economic crisis. A return of United States household savings to about 4 per cent of disposable income – the average of the mid-1990s (i.e. before those households went on a spending spree) – would translate into a fall in household consumption of about 3 per cent of that country’s GDP. Given that before the crisis household consumption in the United States accounted for about 16 per cent of global output and that imports constituted a sizeable proportion of that consumption, this would imply both a reduction in world output and a decline in other countries’ export opportunities. From 2000 to 2007, United States imports as a share of its GDP grew from 15 per cent to

Chart 2.4

### HOUSEHOLD CONSUMPTION IN SELECTED COUNTRIES AND COUNTRY GROUPS, AVERAGE FOR 2007–2008

(Billions of dollars)



**Source:** UNCTAD secretariat calculations, based on *UNCTAD Handbook of Statistics* database.

<sup>a</sup> Bahrain, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, Syrian Arab Republic and United Arab Emirates.

17 per cent, boosting aggregate demand in the rest of the world by \$937 billion, in nominal terms. Moreover, as a result of global production sharing, United States consumer spending increases global economic activities in many indirect ways as well (e.g. business investments in countries such as Germany and Japan to produce machinery for export to China and its use there for the manufacture of exports to the United States). In short, the future path of United States consumption spending has macroeconomic implications, not only for economic recovery in the United States but also for global growth.<sup>7</sup>

The question arises as to which countries' consumer demand could make up for the decline in United States consumer demand. This raises at least two issues: the importance of the absolute level of United States household consumption at the global level, and the composition of United States imports, especially its imports of consumer goods. For instance, discussions about decoupling of economic

performance in developing countries from that in developed countries have often focused on whether and when China could supplement the United States as an engine of global growth. The remainder of this section focuses on these issues. The key finding of this discussion, supported by empirical evidence, is that fostering consumption growth in China, while probably in China's own development interests, will not be able to replace the stimulus to global growth that the United States provided in the past.

United States consumer demand is by far the largest in the world in absolute terms (chart 2.4). It should be noted that chart 2.4 gives a somewhat biased impression because the underlying data relate to the period of sizeable, highly leveraged and unsustainable debt-financed consumer spending in the United States. As a result, household debt to GDP was about 100 per cent, in strong contrast to China where it has been relatively low, at roughly 20 per cent (because, for example, the vast majority of cars are sold for cash) (Lardy, 2009: 6). This means that in the United States consumer demand is likely to shrink – not just grow slower – while in China it is likely to grow rapidly. Hence, the contribution of China to global consumption in the future is likely to be significantly larger than extrapolations of the data represented in the graph may indicate.

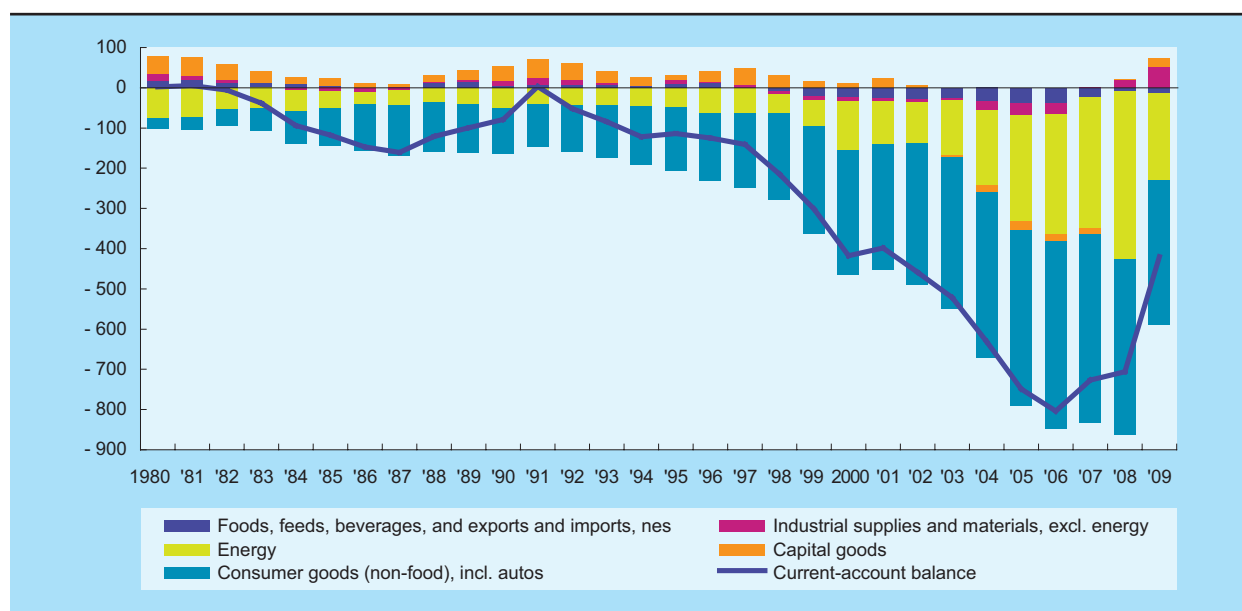
What would be the impact of a reduction in United States consumer demand on the country's current-account balance? The deterioration in the United States current-account balance up to 2006 and its recent improvement have been largely driven by changes in the trade account.<sup>8</sup> Indeed, merchandise trade is by far the most important component of the United States current account. With a deficit of about \$800 billion, which corresponds to 6 per cent of GDP, the trade deficit has been responsible for an average of about 110 per cent of the current-account deficit in the past five years.<sup>9</sup>

However, these aggregate data mask important features that are of particular importance for the link between household consumption and current-account imbalances. While capital goods and industrial supplies and materials (excluding energy) are the largest categories on both sides of the United States trade account, a disaggregation of the United States trade deficit by main end-use categories shows that consumer goods, including automotive products, accounted for over 85 per cent of the increase in the non-energy

Chart 2.5

### CURRENT-ACCOUNT BALANCE AND TRADE BALANCE BY END-USE CATEGORY IN THE UNITED STATES, 1980–2009

(Billions of dollars)



**Source:** UNCTAD secretariat calculations, based on the United States Bureau of Economic Analysis database.

**Note:** nes = not elsewhere specified.

trade deficit between 1997 and 2008 (chart 2.5). A loss in competitiveness may partly explain the worsening balance of trade in consumer goods. But the rapidly expanding household consumption has most likely been the major cause of the large and widening deficit in the consumption categories of United States trade, and thus in its current account.

It is unlikely that the sharp decline in United States imports of consumer goods could be compensated by an increase in consumer spending and associated imports of consumer goods by China or any other developing country. Given that China's consumption was only about one eighth of United States consumption and that its GDP at current exchange rates is only one third that of the United States, there is little reason to believe that household consumption in China could supplant United States household consumption as a driver of global growth any time soon. In order for

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goods by the United States.**

Chinese consumption to compensate for the reduction in United States consumption, the share of consumer spending in GDP in China would need to increase by at least 10 percentage points – an unlikely occurrence in the foreseeable future.<sup>10</sup>

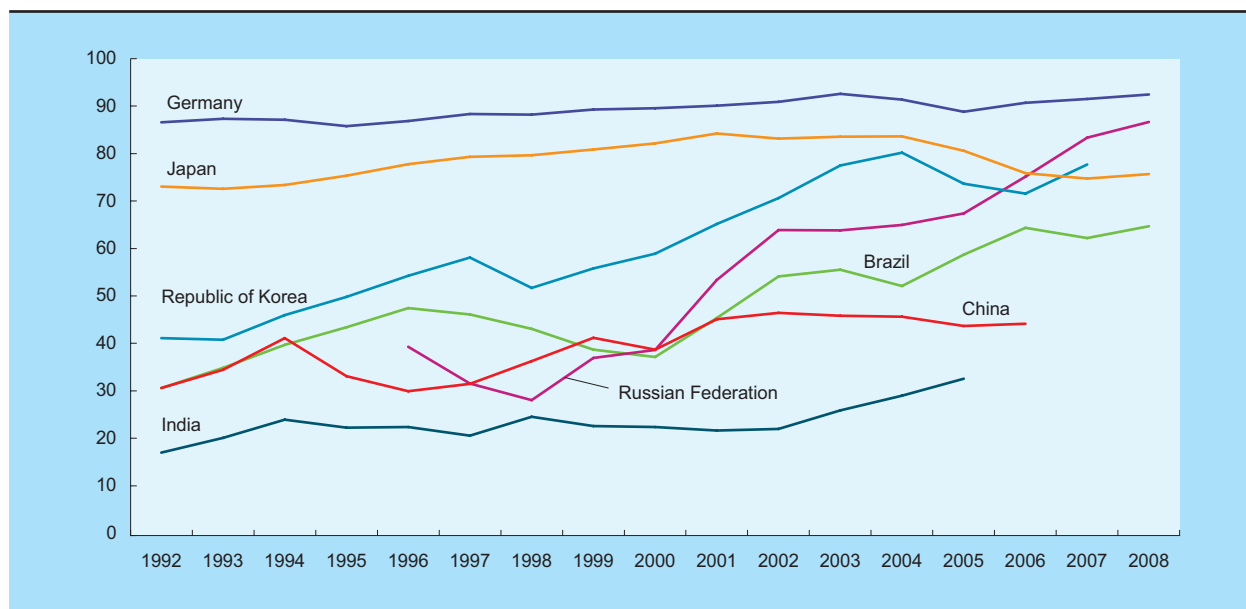
Domestic demand could also expand in other relatively large and rapidly growing developing countries, notably Brazil and India. However, compared to the United States economy, the economies of these countries are still small, making it unlikely that they could compensate fully for the decline in United States

consumption. Rather, household consumption in developed countries in the European Union (EU), particularly Germany, as well as Japan, would be better placed to achieve this.

What is more, the import content of domestic consumption in China is less than 8 per cent – three times smaller than in the United States (Akyüz,

Chart 2.6

**PERCENTAGE OF SIMILARITY IN THE COMPOSITION OF IMPORTS OF SELECTED COUNTRIES WITH THE IMPORTS OF THE UNITED STATES, 1992–2008**



**Source:** UNCTAD secretariat calculations, based on United Nations, *UN COMTRADE* database.

2010: 11). Perhaps even more importantly, the composition of United States imports of consumer goods differs greatly from that in other countries. An import similarity index based on 428 different consumer goods indicates that China's basket of imported consumer goods overlaps that of the United States by only about 45 per cent (chart 2.6).<sup>11</sup> This index also indicates that the composition of imports

of consumer goods by major developed countries with current-account surpluses, namely Germany and Japan, is very similar to that of the United States. Combined with the evidence on the size of household consumption shown in chart 2.4, this shows that these two developed countries would be in a better position than China to compensate for the decline in United States consumer goods imports.



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## C. Rebalancing growth in China: potential employment effects

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### 1. Introduction

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The skilful management of growth processes in a globalizing economy and a pragmatic use of sometimes unconventional economic policies have enabled China to achieve a more than fivefold increase in real per capita income since 1990, and to lift some 390 million citizens out of poverty (Chen and Ravallion, 2008; *TDR 2005*). However, important domestic challenges persist, such as the continued need to generate employment and raise living standards of all segments of the population and in all regions of the country. It has therefore been suggested that, in order to continue its rapid economic growth and progress in reducing income gaps and poverty, China may need to address these domestic imbalances, quite independently of the shocks from the current global economic and financial crisis and of efforts at global rebalancing (Yu, 2007).

The domestic imbalances have arisen in parallel with, and perhaps occasionally exacerbated by, China's emphasis on an investment- and export-led growth path, which has also been linked to sizeable trade surpluses and the accumulation of massive foreign exchange reserves. This section attempts to identify the major challenges that China is facing in redressing its internal and external imbalances, the potential trade-offs and sequencing of different policy options, as well as the potential impact of rebalancing in China on other developing countries. The intention here is not to provide policy prescriptions; rather, it aims to contribute to a better understanding of a number of adjustment-related issues, including the potential impact on both China and other developing countries of policies proposed in the recent international debates on global imbalances.

The analysis in this chapter is based on the recognition that the greatest challenge to China's continuation along its development path is to foster internal integration through the expansion of internal markets based on a much more rapid growth of consumption than that witnessed since the early 2000s. An increase in consumer spending that compensates for slower export growth would also reduce the country's vulnerability to adverse changes in external demand.<sup>12</sup>

With these considerations in mind, this section discusses, first, to what extent Chinese employment depends on exports and, second, the reasons for the relatively small and recently further declining share of household consumption in aggregate demand. It goes on to discuss two policy areas which are frequently mentioned in the rebalancing debate: a currency revaluation, and the range of measures more directly designed to increase total household disposable income, including government transfers and reform of the financial system.

### 2. How dependent is Chinese employment on exports?

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The most internationally visible characteristic of China's development path has been its strong export growth. The nominal value of China's exports has increased more than 100-fold since the country's economic opening in 1979, and its exports accounted for over one third of its GDP during the period 2005–2008. Such emphasis on foreign demand for economic growth inevitably increased China's vulnerability to a downturn in its major export markets. Thus it is

not surprising that China's exports fell sharply with the onset of the global economic crisis. This has led to renewed calls for a rebalancing of the composition of its aggregate demand, which would give less importance to investment and exports and more to a greater reliance on domestic consumption.

An important reason for Chinese policymakers to place greater emphasis on foreign demand was the relatively low level of per capita income and, thus, domestic demand, when the country started its economic catch-up growth. While the importance of exports to China's output growth is well recognized, the contribution of exports to employment creation has been less clear. The close link between exports and foreign direct investment (FDI) enabled relatively easy access to state-of-the-art technology and rapid growth of labour productivity. This high labour productivity translated into lower prices. The ensuing competitive advantage boosted external demand, and hence domestic output and employment. On the other hand, China's exports contain a sizeable share of imported intermediate goods. Domestic value added, which is the part that is comparable to GDP, is generally estimated to account for only about half of total gross revenues (see, for example, Koopman, Wang and Wei, 2008; and Chen et al., 2009).<sup>13</sup>

This comparatively low share of domestic value added in export earnings points to a correspondingly smaller contribution of exports to employment generation in China, although it has had an employment generation effect in other countries in East and South-East Asia. Data from a recent study by Feenstra and Hong (2007) indicate that in China only about 70 million jobs are in export activities, including jobs indirectly related to exports through the production of domestically supplied intermediate inputs.<sup>14</sup> This corresponds to less than 10 per cent of total employment, but may be equivalent to about 20 per cent of wage and salary employment.<sup>15</sup> It has also been estimated that the decline in export-oriented production in 2008 and 2009 caused a loss of about 40 million jobs in China, of which 14.6 million were in agriculture and 15.1 million in manufacturing.

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Employment in China is much less dependent on exports than is commonly supposed.

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The latter corresponds to about 4 per cent of non-agricultural employment in 2007 (Cai, Wang and Zhang, 2010).

The direct contribution of exports to employment generation in China is likely to have remained small relative to total employment in that country.

The long-term development of China's export ratio is difficult to predict from cross-country comparisons because China is much larger than the next largest countries, except India, but India has remained a relatively closed economy. However, worldwide, the domestic value-added content of exports accounts for about one fifth of GDP, on average, and is much lower in large countries than in small ones.<sup>16</sup> In developed countries, value added per worker is much the same in traded as in non-traded sectors. Taken together, this suggests that in the long run export-oriented industries will employ about 10 per cent of all workers in China. In other words, employment in China is much less dependent on exports than is commonly supposed.

### 3. Household consumption and the share of labour compensation in total income

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Private consumer spending in China is low by international standards, regardless of whether it is measured in per capita terms or as a share of GDP (chart 2.7). In 2008, per capita consumption was only \$758 (in real 2000 terms), much lower than that of many other developing countries, including in Asia.

However, a low and declining share of private consumption in aggregate demand is a characteristic frequently observed in rapidly industrializing economies during their early phase of economic take-off. The industrialization experiences of Japan and the Republic of Korea indicate that the share of private consumption in GDP tends to fall during about the first 20 years after economic take-off, before turning to a slow upward trend thereafter. And this may happen in spite of stable positive

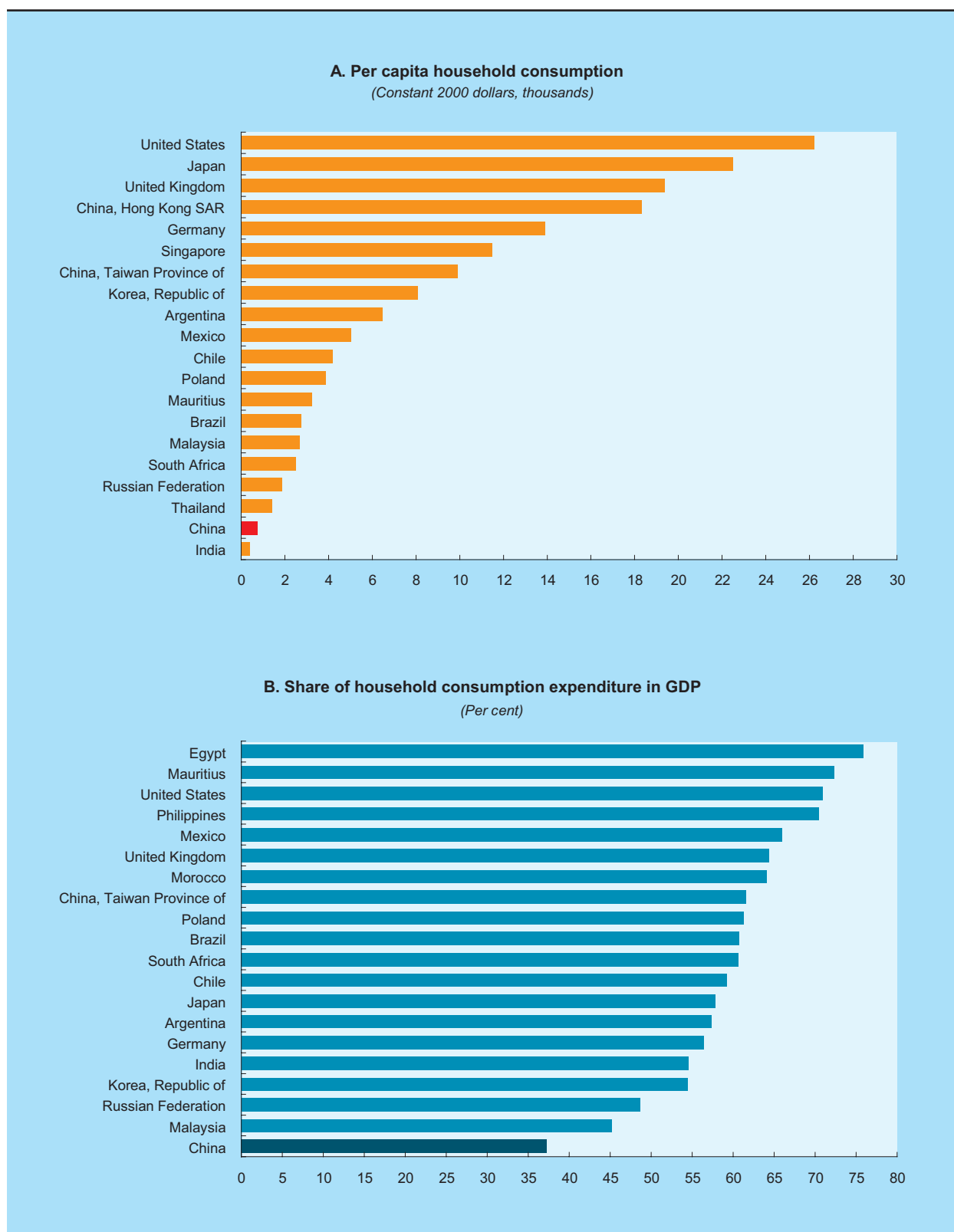
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Private consumer spending in China is low by international standards.

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Chart 2.7

**PER CAPITA HOUSEHOLD CONSUMPTION EXPENDITURE AND SHARE OF HOUSEHOLD CONSUMPTION EXPENDITURE IN GDP IN SELECTED COUNTRIES, 2008**

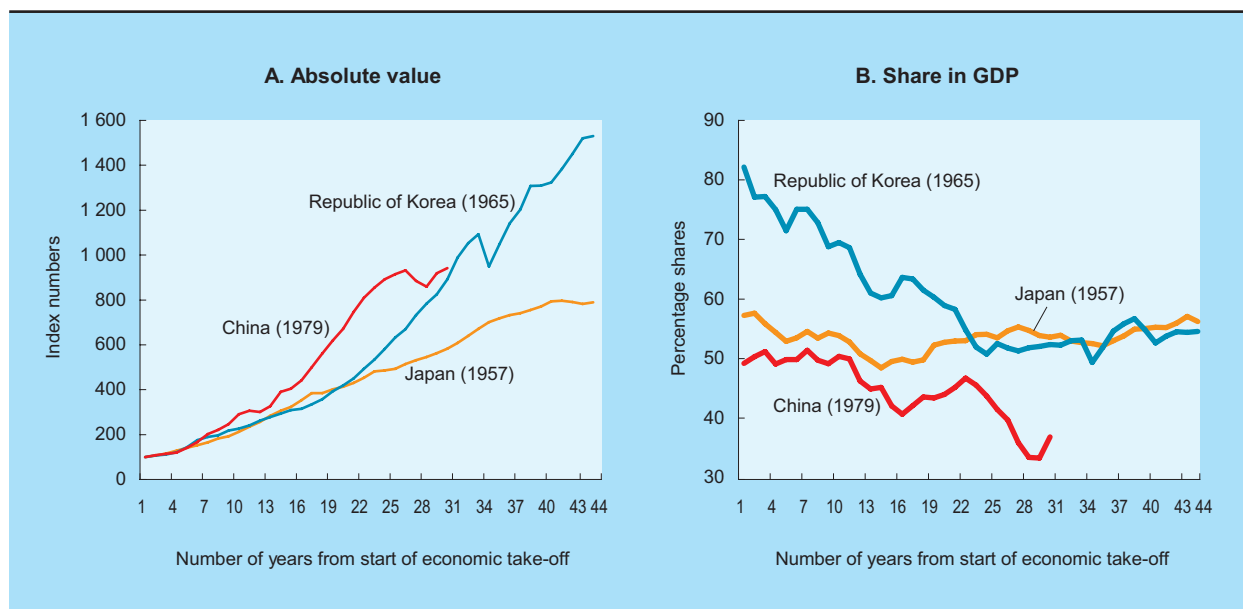


Source: UNCTAD secretariat calculations, based on UNCTAD Handbook of Statistics database.

Chart 2.8

### HOUSEHOLD CONSUMPTION IN CHINA, JAPAN AND THE REPUBLIC OF KOREA FROM START OF ECONOMIC TAKE-OFF

(Index numbers on a logarithmic scale,  
initial year = 100, and percentage shares)



**Source:** UNCTAD secretariat calculations, based on UNCTAD *Handbook of Statistics* database; World Bank, *World Development Indicators*, and *Global Development Finance* database; and Japan, Economic and Social Research Institute (ESRI), *Annual Report on National Accounts of 2010*, Part 1.1.

**Note:** The year in brackets indicates when economic take-off began. For the definition of these dates, see note 17 in the text.

rates of growth in private consumption expenditure (chart 2.8). The reason for this is the key importance of capital accumulation for successful industrialization and the associated high – and initially rising – share of gross fixed capital formation in GDP (chart 2.9).<sup>17</sup> However, contrary to the experiences in Japan and the Republic of Korea at similar stages of industrial development, China experienced a sharp decline in the share of private consumption of GDP and a sharp increase in the share of investment (part of it due to buoyant inflows of FDI) since about the mid-2000s, which is about 25 years after the country began its economic take-off (charts 2.8 and 2.9).

In order to explain the two features observed since the mid-2000s with regard to China's private

consumption expenditure – the relatively slow growth of such expenditure over the five-year period as a whole, and its declining share in GDP – some

observers have focused on the savings behaviour of private households. It is argued that households' marginal propensity to save has been high, and has increased further over the past decade because of demographic developments (such as the increase in the proportion

of the working age population in total population), reforms of State-owned enterprises (SOEs) since the mid-1990s (which increased many households' uncertainty as to their future pension, health and education expenditures) and the limited provision of health care, education and pensions by the Government (see, for example, Modigliani and Cao, 2004; and Blanchard and Giavazzi, 2006).<sup>18</sup>

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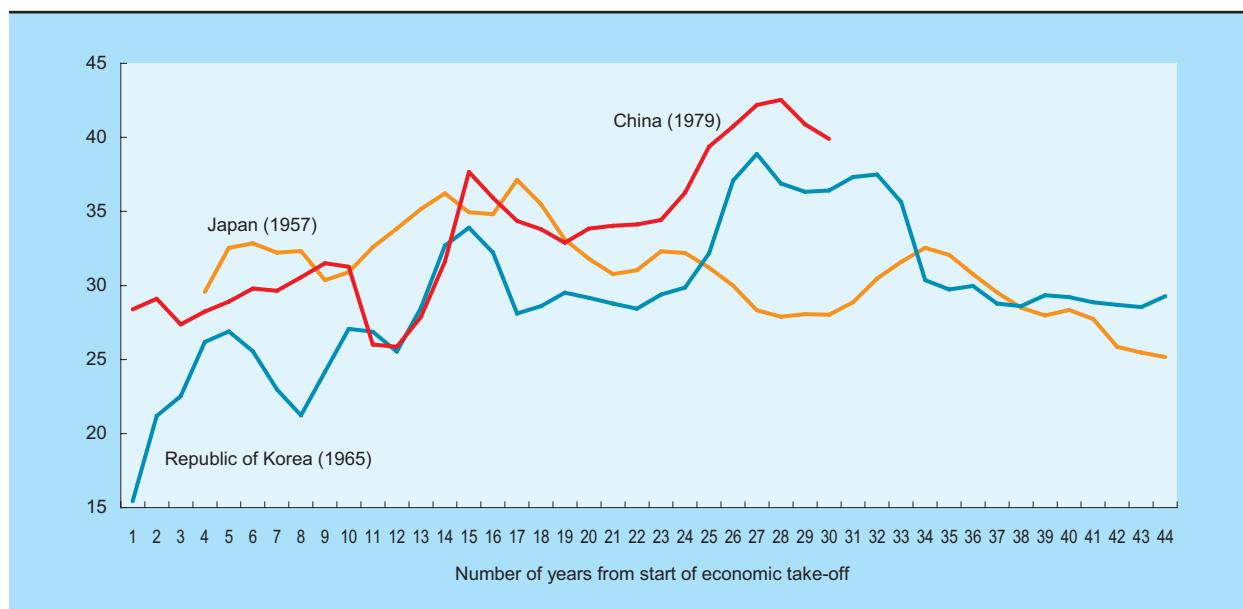
The share of labour in national income in China has declined since the mid-1990s ...

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Chart 2.9

### SHARE OF GROSS FIXED CAPITAL FORMATION IN GDP IN CHINA, JAPAN AND THE REPUBLIC OF KOREA FROM START OF ECONOMIC TAKE-OFF

(Per cent)



**Source:** See chart 2.8.

**Note:** See chart 2.8.

These factors are undoubtedly important explanations for the increase in the savings rate of Chinese households (see, for example, McKinsey Global Institute, 2009). But it is far less likely that they played a major role in the decline of the share of consumption in aggregate demand. Calculations based on regression analysis suggest that the 5 percentage point increase in China's household savings since the early 1990s has been responsible for only one ninth of the 9 percentage point decline in the share of consumption in GDP that has occurred since then.

The same calculations suggest that it is the decline in the share of households' disposable income in GDP that is largely responsible for the relative decline in consumer demand (Aziz and Cui, 2007).

The share of labour income in national income reached a peak in the mid-1990s and has been consistently declining since then.<sup>19</sup> This decline has been closely mirrored by the decline in the share of household consumption in GDP. At the same time,

the share of corporate profits in national income has been increasing (chart 2.10). To be sure, this evidence does not suggest that labour compensation in China has been falling, but only that household income and employee compensation have been growing slower than GDP.<sup>20</sup>

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.... as has the share of household consumption in GDP.

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At first glance, this evidence would suggest that the low and declining share of household consumption in GDP reflects an imbalance between employee compensation and corporate profits (Hung, 2009).

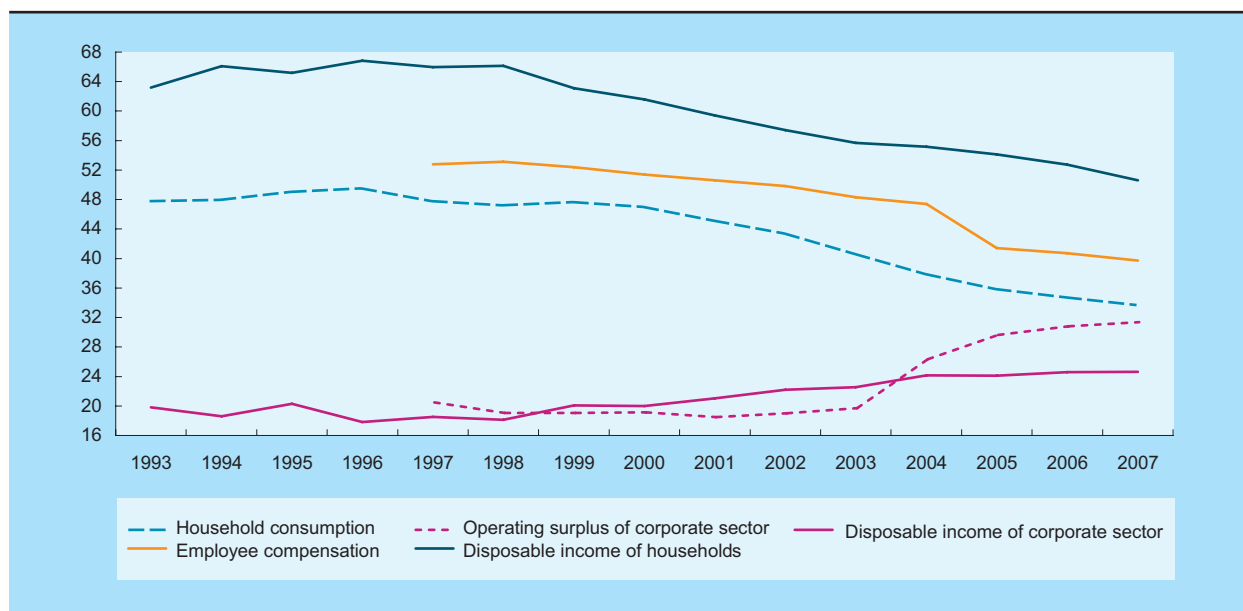
However, this evidence is likely to be the result of a greater number of potentially overlapping factors whose relative quantitative importance is difficult to disentangle.

While statistical factors<sup>21</sup> explain the one-off drop in the share of labour compensation in GDP between 2003 and 2004, structural change has probably been a key determinant of the tendency of this share to decline since the mid-1990s. A recent study

Chart 2.10

### HOUSEHOLD CONSUMPTION, EMPLOYEE COMPENSATION, CORPORATE PROFITS AND DISPOSABLE INCOMES OF HOUSEHOLDS AND FIRMS IN CHINA, 1993–2007

(Per cent of GDP)



Source: UNCTAD secretariat calculations, based on National Bureau of Statistics of China database; and Bai and Qian, 2009a: table 4.

decomposes the change in the aggregate share of labour compensation in GDP into changes stemming from shifts in aggregate output structure and those caused by differences in sectoral employment shares (Bai and Qian, 2009b). On the basis of this analysis, the authors argue that the main cause of the falling share of household disposable income and labour compensation in GDP since the mid-1990s has been the declining importance in total value added of agriculture and the growing importance of industry and services, with the employment share being much larger in the former than in the latter sectors. They also show that the lower share of employment in the industrial sector has been an amplifying factor since the mid-1990s. A large part of the decline in the wage share in this sector during the late 1990s and early 2000s was most likely due to the reform of SOEs. Moreover, for the entire 15-year period, the exceptionally high investment rate, the sizeable FDI inflows and the resulting capital-intensive structure of industrial production, combined with rapid technological progress and very high rates of labour productivity in Chinese manufacturing, must have contributed significantly to the relatively slow pace

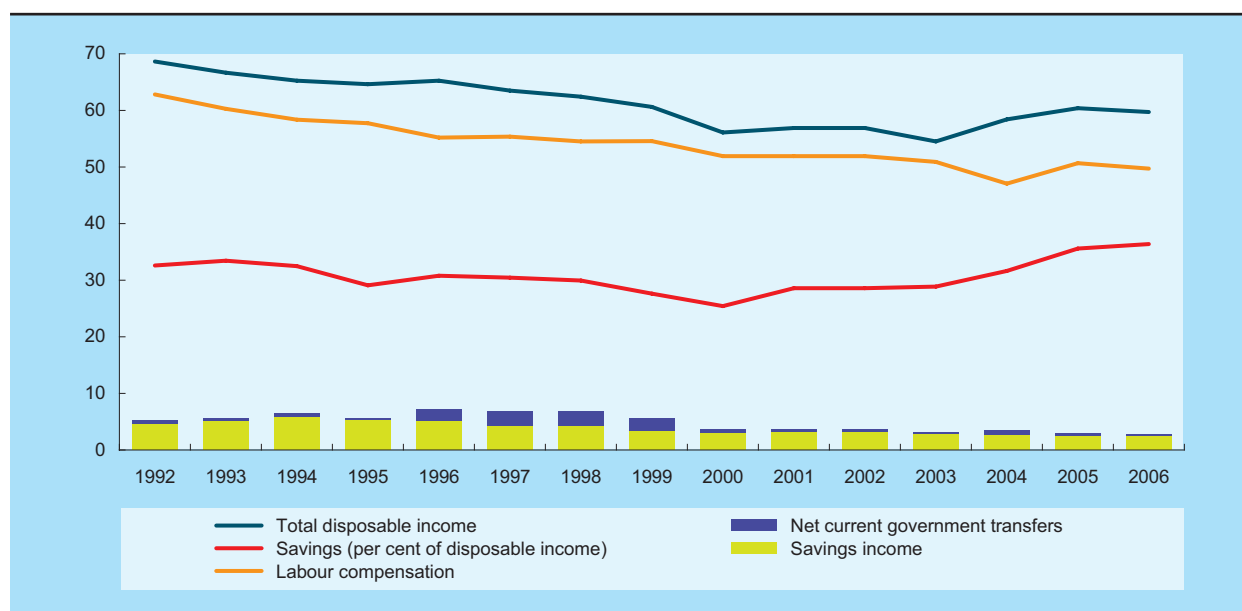
of employment growth in manufacturing, and hence in total labour compensation.<sup>22</sup>

Another factor that might have slowed down the growth rate of total employee compensation was the continued abundant supply of very low-cost workers – a factor that is often assumed to be a defining characteristic of the Chinese economy. There can be little doubt that the existence of surplus labour makes it difficult for workers (and in particular migrants) to bargain for wage increases. While this may explain the relatively slow wage growth (see below), it is more difficult to see why it should have prevented rapid employment growth, and thus contributed to the decline in the share of employee compensation in GDP. The decline in the share of labour compensation in aggregate income had such a sizeable effect on Chinese households' disposable income because the non-wage components of household income were of only marginal importance. Disaggregating household disposable income into wage income, investment income and government transfers shows that government transfers and investment income were very small (chart 2.11).<sup>23</sup> As a corollary, a very

Chart 2.11

### HOUSEHOLD DISPOSABLE INCOME, HOUSEHOLD INCOME FROM DIFFERENT SOURCES AND HOUSEHOLD SAVINGS IN CHINA, 1992–2006

(Per cent of GDP, unless otherwise indicated)



**Source:** UNCTAD secretariat calculations, based on National Bureau of Statistics of China database.

**Note:** Labour compensation and total disposable income refer to flow of funds accounts.

large proportion of household disposable income in China consists of wages. Households' savings income has been adversely affected by the low level – and further decline between the mid-1990s and mid-2000s – of interest rates on bank deposits, which have been the main vehicle of savings for Chinese households. Moreover, there is no strong link between household income and developments on the stock market because dividend payments are low, and because only a small percentage of Chinese households actually hold shares in Chinese firms, either directly through the stock market or indirectly through institutional investors and pension funds (Aziz and Cui, 2007). The recent decline in labour compensation was accompanied by some, but by no means a strong, increase in households' propensity to save (chart 2.11), especially since the early 2000s following reforms of SOEs, due to increased uncertainty over old-age pensions, health and education that these enterprises had previously provided. Taken together, this evidence suggests that in order to increase households' disposable income, and hence consumer demand, there might be a case for larger

budgetary transfers. Increased public spending on health, education and housing may be useful for combating any tendency towards increased precautionary savings.

#### 4. Prospects for increasing household consumption in China

It is often argued that a strong appreciation of the renminbi is the most important, if not the only, policy measure for achieving rebalancing in China. It would sharply reduce the country's external surplus, and, as a side effect, also the United States current-account deficit (e.g. Krugman, 2010). This is clearly overly simplistic for at least two reasons. First, while most observers would agree that China's strong external position has been supported by a competitive exchange rate, it is not clear whether the renminbi is highly undervalued as is frequently suggested: one recent study suggests that China's currency may be

undervalued by somewhere between 2.5 per cent and 27.5 per cent (Evenett, 2010). This can hardly provide the basis for clear policy guidance on such a controversial matter. Second, the same study supports findings of earlier simulations (e.g. *TDR 2005*) showing that a small appreciation of the renminbi, of about 5 per cent, might eliminate China's trade surplus but improve the United States trade deficit only a little, and that even a larger appreciation, of about 10 per cent, will not be enough to eliminate the United States' trade deficit with China. The latter finding has to do with the associated higher costs for United States producers that buy parts and components from China, which would cause significant adverse effects in the United States in terms of both exports and employment. This indicates that, while exchange-rate adjustments can be viewed as facilitating global rebalancing, they cannot solve the problem of imbalances; for that purpose, other policy measures are necessary.

There is widespread agreement that measures such as an increase in government spending on social security (including pensions, health and education) and public investment in housing could help reduce household precautionary savings and may help increase consumer spending in China. The additional government expenditures could be financed at least partly by dividend payments from SOEs (World Bank Beijing Office, 2006: 15–17; Yu, 2007; McKinsey Global Institute, 2009). This would help reverse the adverse effects resulting from the extensive reforms of SOEs in the 1990s, which substantially reduced the public provision of health care, education, pensions and housing, and shifted this responsibility to households. For example, the proportion of health spending by households increased from less than 20 per cent in the 1980s to over 60 per cent in the 2000s (Blanchard and Giavazzi, 2006), despite the fact that in the mid-2000s government spending on health had increased by 125–140 per cent (Hong, Vos and Yao, 2008: 46).

Further reform of the financial sector may also help boost household consumption. The most important measure so far has probably been the large-

scale recapitalization of the State-owned commercial banks, which removed the sizeable overhang of non-performing loans from banks' balance sheets. Nevertheless, the institutional set-up of the financial sector and the lending policy of China's largest banks may have provided overly strong incentives for investment and an insufficient return on household savings deposits, as discussed in some detail by Yu (2007), for example.<sup>24</sup> Financial sector reform is perhaps the area which shows most clearly the difficulty in balancing the need for rapid economic growth in the short run and supporting the long-term process of structural rebalancing.

The discussion above also indicates that the tendency of a falling share of consumption in GDP results mainly from the decline in labour compensation as a share in GDP. The latter development, in turn, is closely related to structural change, involving a shift from activities with a high employment share (particularly agriculture) towards industrial activities with a generally lower employment share, and to an emphasis on capital-intensive production in the manufacturing sector. However, achieving such structural change – which is a natural process in a country's economic development – without real wages growing more rapidly relative to productivity than in the past may become increasingly difficult. Ongoing rapid economic growth, combined with slower growth of the working-age population, due to the one-child policy adopted in the early 1980s, may well signal a situation in China where demand for labour starts increasing more rapidly than the workforce, and the rural labour surplus grows less rapidly than in the past (Cai, 2007, see also box 2.1).

One way of estimating developments regarding surplus labour is by looking at the age structure of a country's labour force.<sup>25</sup> While the size of China's total labour force (i.e. the population aged 15 years and older), is likely to peak only in the mid-2030s, its pre-retirement labour force (the population aged between 15 and 64 years), can be expected to peak at around 2015 (chart 2.12). Perhaps more importantly, the size of the population entering the labour force defined broadly

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Exchange-rate adjustments alone cannot solve the problem of imbalances.

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It will be difficult to sustain rapid industrialization without a faster growth of real wages.

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## Box 2.1

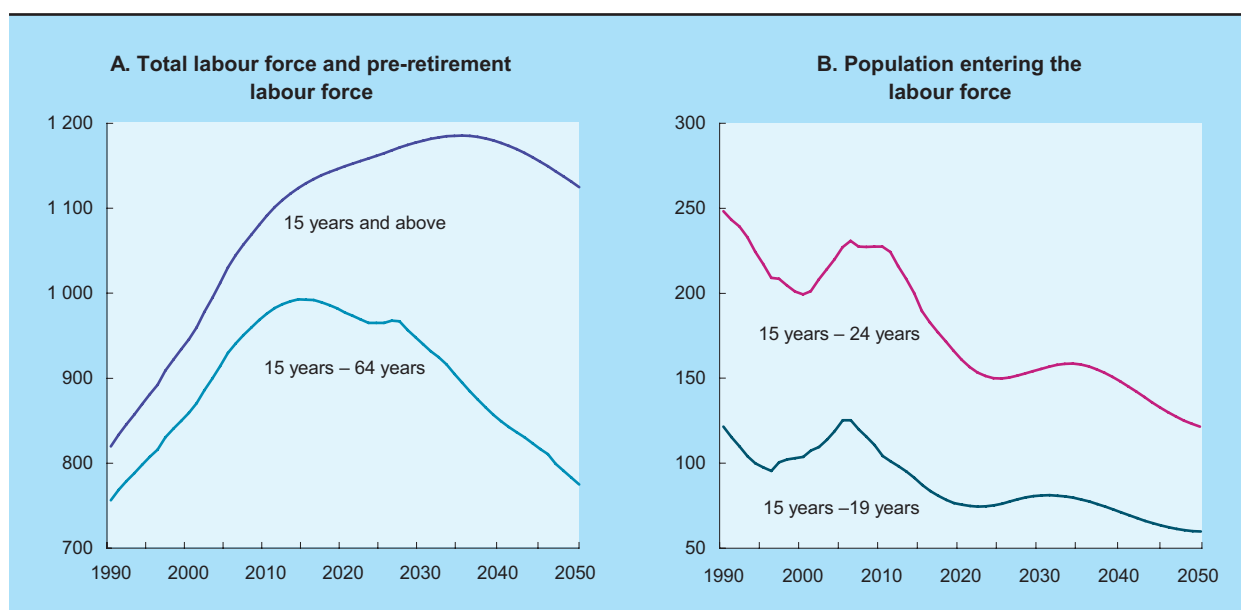
## CHINA: SKILL COMPOSITION OF NEW JOB SEEKERS

The number of additional workers entering the labour market is only one element of the supply-demand balance on the labour market; another is the skill level of workers. China has a sharply growing number of college graduates, and it might not always be easy for these higher skilled job seekers to fulfil their career expectations. Earlier catch-up experiences in East Asia suggest that changes in the sectoral structure of an economy, for example linked to the technological upgrading of its export sector, can absorb part of the increased supply of educated workers (*TDR 2003*). This is likely to happen also in China: the slower growth of the labour surplus could make unskilled labour relatively more expensive, and the growing supply of skilled labour could make skilled workers relatively less expensive. As a result, the country's comparative advantage could shift towards more skill-intensive manufactures and services, thereby absorbing part of the increased skill supply. This mechanism clearly has implications not only for China itself but also for other developing countries, particularly those that participate in vertical supply chains across East and South-East Asia. On the other hand, there are indications that in rural areas (i.e. the sources of another significant segment of job seekers), the quality of education is relatively low (Knight, Li and Deng, 2009). However, a gradual lifting of the household registration system (discussed intensely in the Chinese media prior to the Party conference in spring 2010, reflected in dozens of articles and op-ed contributions in *China Daily*), and in particular, a growing demand for simple service activities associated with the increasing importance of household consumption for economic growth as well as with urbanization, is likely to absorb much of these relatively low-skilled workers.

## Chart 2.12

## CHINA'S LABOUR FORCE BY AGE STRUCTURE, 1990–2050

(Million)



**Source:** UNCTAD secretariat calculations, based on the United States Census Bureau database.

**Note:** Data from 2010 are estimates.

(i.e. the 15–24 year age group) reached its peak of 224 million people in 2009, and that of the population entering the labour force defined narrowly (i.e. the 15–19 year age group) reached its peak of 125 million people in 2005. Taken together, this evidence is indicative of an ageing labour force in China, which tends to be less mobile. Consequently, employers will need to pay a higher wage premium to get and retain workers,<sup>26</sup> so that real wages are likely to grow more rapidly relative to productivity than in the past. Indeed, according to media reports, minimum wages

have been rising strongly in several provinces (Mitchell and Dyer, 2010). While this evidence suggests a broad tendency towards rising wages, it must be interpreted with caution. Part of it could be a reaction to more supportive agricultural policies, such as the abolition of the agricultural tax (Knight, 2007). But in any case, although not for demographic reasons, this would have increased the premium for employers to induce workers to migrate from rural to urban areas. All of these factors taken together could be a powerful stimulus to domestic consumption.

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## D. The potential impact of a global rebalancing on trade flows and employment

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The discussion in the two preceding sections examined issues relating to rebalancing in the context of the national economies in the United States and China. This section focuses on the implications of these processes for other countries. These implications are inferred from a simulation of the impact of reduced consumer spending in the United States and increased consumer spending in China (both measured as a share in GDP) on changes in sectoral trade flows and employment. The annex to this chapter provides details on how this simulation was carried out, and presents some additional results. The results from the simulation may be considered as reflecting the medium-term effects (i.e. spanning a period of 5–10 years) of rebalancing confined to the United States and China. However, it should be borne in mind that the results of the simulation are only partial; they are not intended to describe the overall impact of a global rebalancing. In addition, they should be interpreted with considerable caution since they do not take into account a number of factors, such as difficulties in moving labour across sectors, subsidies and problems of market access. Nevertheless, simulations are useful for identifying the countries and sectors that are vulnerable to global

rebalancing and for forming an idea of the order of magnitudes involved.

The simulation is based on the assumptions that in both China and the United States the share of household consumption in GDP would be restored to historic levels, and that adjustment in the United States would lead to a slowdown in the rate of GDP growth there. The simulation indicates that this would remove the demand stimulus, which, prior to the outbreak of the current crisis, the United States was providing to the world economy, and that this would not be compensated by a stimulus of similar size from increased consumption in China.

The results of the simulation are presented in terms of changes relative to 2008. With respect to global imbalances as a whole, the results indicate that the assumed adjustments in China and the United States would cause substantial changes in these two countries' trade accounts: for China, the trade surplus as a share of GDP would decline by more than eight percentage points, so that only a fairly small surplus position would remain, while for the United States, the trade balance as a share of GDP would improve

by more than five percentage points and transform the trade balance into a slight surplus (columns 2 and 3 in table 2.1). However, important trade imbalances would persist in other countries: for example, trade surpluses would decline only a little in Germany, in a number of developing countries in East and South-East Asia, and in the countries in the group comprising West Asia and North Africa. As mentioned in the two preceding sections, this is because the absolute value of China's household consumer spending is much smaller than that of United States households, its import content is smaller, and the composition of China's imports of consumer goods differs greatly from that of the United States.<sup>27</sup> The net effect of the two adjustments taken together would be deflationary for the world economy, while they would not be sufficient to unwind the large global imbalances.

Looking at developments in exports and imports separately (columns 4 and 5 in table 2.1), the results indicate that for the United States a sharp decline in imports would be accompanied by an even sharper increase in exports. Apart from China, whose trade balance would deteriorate mainly because of its own adjustment efforts, the greatest decline would occur in Thailand, followed by Mexico, Japan (which would experience the strongest percentage decline in exports), Germany and Singapore. In most countries, particularly developing countries in Asia – notably China, India and Thailand – the deterioration in the trade balance would be caused mainly by a decline in exports rather than by an increase in imports, as indicated by the difference in the growth rates reported in columns four and five of the table. The strong increase in United States exports (a large proportion of which consists of machinery and electronic equipment, as well as services) and the strong decline in its imports would be facilitated by the sharp depreciation of the dollar (column 7 in table 2.1).<sup>28</sup> Additional results (not shown here) indicate that the bulk of the increase in United States exports would be directed to developed countries, namely EU members and Japan, while the bulk of the decline in United States imports would particularly affect EU members, China and Japan.

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The net effect of adjustments in China and the United States on the world economy will be deflationary ...

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... and yet insufficient for the unwinding of global imbalances.

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Turning to changes in the sectoral structure of trade, the percentage changes in the trade balance of the United States would be largest for machinery and equipment and electronic equipment (table 2.2). This improvement would be mirrored by a sizeable deterioration in the trade balance for these sectors in all Asian economies included in the table, as well as Mexico and Germany. The strong improvement in the United States trade balance for chemicals (which includes pharmaceuticals – the single most important item in United States consumer goods imports) would be mirrored by a substantial deterioration in the trade balance for these products in China, Germany and Singapore. The strong improvement in the United States trade balance for motor vehicles and other transport equipment would be mirrored by a sizeable deterioration in the trade balance for these products in Argentina, Brazil, Mexico, Germany, Japan, the Republic of Korea, and Singapore (though most of these effects for Singapore are likely to be due to trans-shipment, as witnessed by the strong deterioration in Singapore's trade balance for commercial services and trade and transport).

To determine how the changes in sectoral trade balances would affect employment, it may be useful to relate these changes to sectoral differences in labour intensity. Concentrating on the changes in world exports of industrial products (shown in the last column of table 2.2) suggests that the simulated adjustments in the economies of China and the United States would lead to sizeable adverse employment impacts in the world economy as a whole. This is indicated by the fact that world exports would decline in the majority of industrial sectors.<sup>29</sup> Perhaps more importantly, the largest declines would occur in the most labour-intensive industrial sectors (chart 2.13).<sup>30</sup>

The decline in world exports of labour-intensive industrial goods will have different implications for different countries, depending on their sectoral production and trade structure. The simulation results for changes in sectoral employment suggest that in China employment would decline in most industrial sectors (but substantially increase in agriculture,

Table 2.1

**GTAP SIMULATION RESULTS OF THE IMPACT OF REBALANCING IN THE UNITED STATES AND CHINA ON TRADE FLOWS AND FACTOR PRICES, SELECTED COUNTRIES/GROUPS**

	Change in trade balance	Share of trade balance in GDP	Change in export volume	Change in import volume	Change in terms of trade <sup>a</sup>	Appreciation <sup>b</sup>	Change in wages <sup>c</sup>	
							Unskilled labour	Skilled labour
	(Percentage points)				(Per cent)			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
China	-8.2	1.8	-17.6	3.7	2.9	7.1	6.6	8.8
United States	5.2	0.6	41.9	-15.4	-7.2	-8.2	-8.1	-8.5
China, Hong Kong SAR	-1.4	14.9	-1.2	0.6	-0.1	2.3	2.3	2.2
China, Taiwan Province of	-1.0	14.3	-0.6	1.4	0.3	2.1	2.1	2.0
Indonesia	-1.1	0.8	-2.8	1.0	0.3	2.7	2.7	2.7
Malaysia	-1.6	42.4	-0.5	1.3	0.3	2.3	2.1	1.9
Philippines	-1.3	3.6	-1.4	0.8	-0.1	2.1	2.1	2.0
Republic of Korea	-1.6	1.5	-3.4	1.5	0.8	2.9	3.1	2.9
Singapore	-1.7	-2.6	-0.3	1.3	0.5	2.7	2.7	2.7
Thailand	-3.7	5.8	-3.7	1.9	0.4	2.9	2.9	2.9
Rest of East and South East Asia	-1.6	2.0	-2.2	0.1	-0.1	2.1	2.0	1.7
India	-1.2	-7.7	-6.6	2.7	1.1	3.6	3.8	3.8
South Asia, excl. India	-1.2	-17.1	-6.7	1.7	0.8	3.3	3.2	3.3
West Asia and North Africa	-1.5	13.8	-1.7	2.6	0.7	2.8	2.9	2.6
Sub-Saharan Africa	-1.7	1.2	-2.5	3.1	0.7	3.1	3.2	3.3
Argentina and Brazil	-1.8	0.8	-7.7	5.2	2.1	4.1	4.0	4.1
Mexico	-2.1	-2.1	-6.0	4.9	3.3	3.2	3.3	3.4
Rest of developing America	-1.6	-1.8	-3.8	3.4	1.5	2.7	2.8	2.9
Canada	-1.7	-2.7	-2.9	5.7	3.1	2.3	2.4	2.4
Germany	-1.9	3.8	-3.8	2.3	0.6	3.2	3.1	3.1
Rest of EU-25 and EFTA <sup>d</sup>	-1.6	-3.5	-3.6	2.0	0.7	3.2	3.2	3.2
Australia and New Zealand	-1.5	-1.8	-5.5	3.8	1.5	3.6	3.7	3.6
Japan	-2.0	-1.0	-12.7	5.7	2.3	4.3	4.3	4.4
CIS, excl. the Republic of Moldova	-0.8	6.6	-1.2	1.4	0.4	2.9	3.0	2.8
Rest of the world	-1.8	-9.6	-2.3	1.7	0.3	2.9	2.9	2.6

**Source:** UNCTAD secretariat calculations.

**Note:** All changes are relative to 2008.

**a** An improvement in the terms of trade indicates that the price of exports increased more (or fell less) than the price for imports.

**b** An appreciation indicates an increase in the price for primary factors, which may be likened to an appreciation of the real exchange rate.

**c** The definition of skilled and unskilled labour and the wage ratio between skilled and unskilled labour is explained in note 2 of the annex to this chapter.

**d** EFTA - European Free Trade Association.

utilities and services) (table 2.3). By contrast, in the United States, employment would increase in most industrial sectors, as well as in agriculture, but decline in utilities and services. The United States is also the only country shown in the table (except Singapore) which would experience an increase in employment in the two labour-intensive sectors for

which the estimations indicate an increase in world exports (see chart 2.13): “machinery and equipment not elsewhere classified”, and “transport equipment not elsewhere classified”. This contrasts with the results for most countries, especially those in Asia, for which the simulations indicate that adverse employment effects are likely to be concentrated in the

Table 2.2

## GTAP SIMULATION RESULTS FOR CHANGES IN SECTORAL TRADE BALANCE, SELECTED COUNTRIES/GROUPS

(Per cent of GDP in 2008)

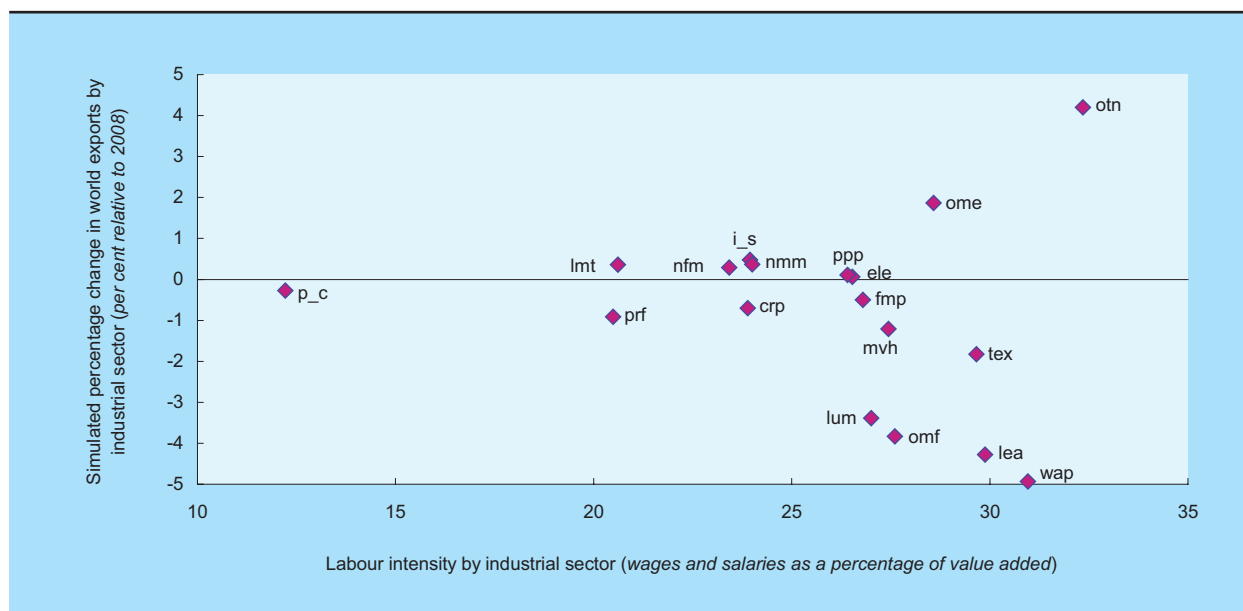
	China	United States	Argentina and Brazil	CIS <sup>a</sup>	Germany	Japan	Malaysia	Mexico	Rep. of Korea	Singapore	Thailand	Sub-Saharan Africa	Memo item: Change in world exports relative to base year
Grains and crops	-0.22	0.07	-0.06	-0.01	-0.01	-0.01	0.00	-0.10	-0.02	-0.00	0.06	-0.09	1.46
Forestry and fishing	-0.02	0.00	-0.00	0.01	-0.00	-0.00	0.03	-0.00	-0.00	-0.00	0.00	-0.00	1.03
Mining	-0.08	0.05	-0.01	-0.01	-0.01	-0.02	0.02	0.04	-0.00	-0.09	-0.14	-0.08	-0.18
Livestock and meat products	-0.13	0.05	-0.07	-0.02	-0.00	-0.00	0.01	-0.08	-0.01	-0.00	-0.01	-0.01	0.34
Processed food	-0.24	0.14	-0.11	-0.01	-0.02	-0.02	0.16	-0.19	-0.01	0.00	-0.16	-0.05	-0.93
Textiles	-0.51	0.10	-0.03	-0.00	-0.01	-0.01	0.05	-0.14	-0.02	0.05	-0.01	-0.02	-1.85
Wearing apparel	-0.40	0.11	-0.01	0.00	0.00	0.00	-0.07	-0.11	-0.02	-0.02	-0.17	-0.06	-4.95
Leather products	-0.42	0.05	-0.03	0.01	0.00	-0.00	-0.01	0.02	0.01	0.01	0.01	0.00	-4.30
Wood products	-0.31	0.11	-0.08	-0.00	-0.02	-0.02	0.02	-0.13	-0.01	-0.01	-0.09	-0.01	-3.41
Paper products and publishing	-0.11	0.11	-0.06	-0.01	-0.03	-0.02	-0.01	-0.08	-0.04	-0.04	-0.03	-0.02	0.09
Petroleum and coal products	-0.02	0.01	-0.01	-0.01	0.00	0.01	-0.00	-0.00	0.01	0.07	-0.00	-0.01	-0.29
Chemicals, rubber, plastic products	-0.62	0.68	-0.21	-0.13	-0.34	-0.23	-0.33	-0.28	-0.22	-0.42	-0.37	-0.14	-0.72
Mineral products, nes	-0.09	0.05	-0.04	-0.00	-0.01	-0.01	0.03	-0.04	-0.01	-0.01	-0.03	-0.01	0.35
Ferrous metals	-0.11	0.04	-0.06	0.02	-0.00	-0.02	0.03	-0.02	0.01	0.01	-0.07	-0.04	0.46
Metals, nes	-0.08	0.07	-0.05	-0.09	-0.02	-0.01	0.02	-0.06	-0.00	-0.01	0.02	-0.12	0.27
Metal products	-0.33	0.12	-0.04	-0.00	-0.03	-0.03	-0.00	-0.11	-0.02	-0.02	-0.08	-0.03	-0.52
Motor vehicles and parts	-0.20	0.40	-0.15	-0.02	-0.18	-0.32	-0.00	-0.41	-0.26	-0.04	-0.11	-0.11	-1.23
Transport equipment, nes	-0.25	0.37	-0.20	-0.10	-0.17	-0.10	-0.24	-0.03	-0.20	-0.67	-0.15	-0.15	4.18
Electronic equipment	-1.38	0.68	-0.13	-0.02	-0.18	-0.49	-0.77	-0.36	-0.33	-0.23	-0.72	-0.10	0.04
Machinery and equipment, nes	-2.05	1.40	-0.45	-0.17	-0.66	-0.64	-0.54	-0.71	-0.38	-0.45	-1.10	-0.37	1.85
Manufactures, nes	-0.58	0.20	-0.02	-0.01	-0.02	-0.03	0.01	-0.02	-0.02	0.01	-0.22	-0.04	-3.87
Utilities and construction	-0.02	0.03	-0.02	-0.03	-0.01	-0.02	-0.01	0.00	-0.00	-0.01	-0.01	-0.02	4.27
Trade and transport	-0.47	0.34	-0.07	-0.11	-0.08	-0.09	-0.10	-0.11	-0.09	-0.15	-0.32	-0.15	-0.21
Commercial services	-0.15	0.51	-0.12	-0.10	-0.13	-0.11	-0.11	-0.10	-0.22	-0.47	-0.19	-0.17	1.10
Other services	-0.17	0.29	-0.08	-0.10	-0.10	-0.07	-0.16	-0.13	-0.13	-0.14	-0.14	-0.16	3.85

**Source:** UNCTAD secretariat calculations.**Note:** Trade balance refers to volumes. Percentage shares of trade volumes and values in GDP in the base year are identical, as prices are assumed to equal one. nes = not elsewhere specified.<sup>a</sup> Excluding the Republic of Moldova.

Chart 2.13

### GTAP SIMULATION RESULTS FOR CHANGES IN WORLD EXPORTS AND LABOUR INTENSITY BY INDUSTRIAL SECTOR

(Per cent)



**Source:** UNCTAD secretariat calculations, based on GTAP simulations; and UNIDO, *Industrial Statistics* database, CD-ROM 2009.

**Note:** Labour intensity is measured as the unweighted world average of the share of wages and salaries in sectoral value added during the period 1995–2005.

crp	= Chemicals, rubber and plastic products	nmm	= Non-metallic mineral products
ele	= Electronic equipment	ome	= Machinery and equipment not elsewhere classified
fmp	= Metal products	omf	= Manufactures not elsewhere classified
i_s	= Ferrous metals	otn	= Transport equipment not elsewhere classified
lea	= Leather products	p_c	= Petroleum and coal products
lmt	= Livestock and meat products	ppp	= Paper products, publishing
lum	= Wood products	prf	= Processed food
mvh	= Motor vehicles and parts	tex	= Textiles
nfm	= Metals not elsewhere classified	wap	= Wearing apparel

most labour-intensive sectors. For example, among the countries shown in table 2.3, Japan, Malaysia, the Republic of Korea and Thailand may experience a reduction (or only a very slight increase) in employment in labour-intensive sectors such as apparel, transport equipment, textiles, and machinery and equipment (which includes domestic appliances). As

already noted, these results should not be taken as quantitatively precise predictions. Nonetheless, they provide useful qualitative information that indicates broad directions of the possible employment effects of a global rebalancing resulting from adjustments only in China and the United States.

Table 2.3

## GTAP SIMULATION RESULTS FOR CHANGES IN SECTORAL EMPLOYMENT, SELECTED COUNTRIES/GROUPS

	(Per cent)											
	China	United States	Argentina and Brazil	CIS <sup>a</sup>	Germany	Japan	Malaysia	Mexico	Republic of Korea	Singapore	Thailand	Sub-Saharan Africa
<i>Industrial goods</i>												
Petroleum and coal products	1.1	-2.7	-0.4	-0.1	-0.3	0.2	0.1	0.6	-0.8	0.7	0.5	0.5
Processed food	4.8	-3.7	-0.9	-0.0	0.2	-0.1	1.8	3.5	-0.2	0.6	-0.9	-0.2
Livestock and meat products	7.2	-1.3	-2.1	-0.3	0.3	-1.6	0.9	0.9	-1.2	0.2	-0.4	0.3
Metals, nes	-11.7	30.4	-6.7	-2.4	-2.7	-4.1	1.1	-1.8	-1.7	1.0	-3.0	-4.4
Chemicals, rubber, plastic products	-7.4	14.7	-4.3	-2.8	-3.3	-4.9	-2.0	1.7	-3.0	-1.9	-3.7	-1.6
Ferrous metals	-5.7	21.2	-4.1	0.3	-0.7	-2.8	2.6	3.6	0.1	4.7	1.0	0.3
Non-metallic mineral products, nes	-0.6	7.8	1.2	1.0	1.8	1.6	3.0	3.0	2.3	3.8	4.1	2.2
Paper products and publishing	-3.1	3.3	-2.8	-0.6	-0.8	-0.9	-0.7	1.8	-1.9	-1.2	-1.8	-0.4
Electronic equipment	-11.4	27.2	-1.8	0.1	-0.8	-4.7	0.1	-4.1	-1.6	0.5	-2.1	1.1
Metal products	-7.4	12.2	-2.5	0.2	0.4	0.6	1.5	-2.4	0.2	1.3	-0.0	1.8
Wood products	-11.7	4.9	-4.5	0.4	1.2	2.0	0.6	-6.6	0.7	1.6	-3.5	0.5
Motor vehicles and parts	-2.3	4.1	-0.6	0.9	-0.3	-5.4	1.1	0.4	-2.1	4.0	4.0	1.5
Manufactures, nes	-9.5	17.3	0.8	-0.5	0.6	0.3	-0.0	1.0	-0.7	3.0	-3.2	-0.5
Machinery and equipment, nes	-10.3	21.3	-5.2	-0.2	-2.3	-5.7	-2.2	-3.0	-1.7	1.3	-4.0	-0.8
Textiles	-8.6	13.7	-2.2	0.2	0.3	-1.7	1.5	-4.1	-1.2	3.5	-1.3	-0.2
Leather products	-12.9	29.6	-3.8	2.9	1.4	-0.4	-3.1	5.4	1.4	2.6	1.0	2.2
Wearing apparel	-4.4	4.2	0.1	0.5	1.0	0.7	-6.3	-3.5	-1.4	-4.7	-2.6	-1.9
Transport equipment, nes	-7.1	22.4	-10.3	-7.7	-8.3	-10.4	-12.5	-0.8	-8.8	-6.7	-9.9	-8.7
<i>Memo items:</i>												
<i>Agriculture and mining</i>												
Grains and crops	3.6	7.7	-1.6	-0.1	-0.5	-1.3	-0.1	-0.3	-0.5	-0.2	-0.9	-0.6
Forestry and fishing	3.9	3.7	-1.4	0.7	0.3	-0.1	1.1	0.3	0.4	0.3	-0.6	0.5
Mining	-2.3	6.8	-1.3	0.0	0.3	-0.6	0.5	3.0	1.0	1.8	1.4	-0.3
<i>Utilities and services</i>												
Utilities and construction	3.3	-2.4	5.8	1.3	5.4	5.7	4.2	1.5	3.8	4.4	8.8	5.2
Trade and transport	1.6	-1.5	0.3	-0.2	-0.6	0.4	-0.2	-0.8	-0.5	-0.1	0.3	0.1
Commercial services	1.6	-0.6	-0.2	-0.5	0.4	0.2	-0.5	-0.6	-0.3	-0.9	-0.8	-0.3
Other services	8.6	-5.7	0.4	-0.3	0.3	-0.2	-0.7	0.2	-0.4	0.0	-0.1	-0.1

**Source:** UNCTAD secretariat calculations, based on GTAP simulations; and UNIDO, *Industrial Statistics* database, CD-ROM 2009.

**Note:** The data in the table refer to percentage changes in the demand for unskilled labour relative to 2008. The percentage changes in the demand for skilled labour are very similar, and thus are not shown. Industrial goods are listed by increasing labour intensity, measured as the unweighted world average of the share of wages and salaries in sectoral value added during the period 1995–2005.

nes = not elsewhere specified.

<sup>a</sup> Excluding the Republic of Moldova.

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## E. Conclusions: the need for a global macroeconomic reorientation for growth and employment creation

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Before the outbreak of the financial and economic crisis, strong consumer spending by United States households and the associated sharp increase in that country's imports of consumer goods led to a rapid growth of its current-account deficit, but also served as a significant demand stimulus to the world economy. However, much of this consumer spending was debt-financed and proved to be unsustainable. Households could initially sustain rising debt burdens and maintain, or even increase, consumer spending, despite a declining share of labour compensation in income. This was because a series of asset price bubbles contributed to increasing their wealth. With the collapse of the United States housing market, households were forced to unwind their debt positions and cut consumer spending. This trend is set to continue unless another asset bubble occurs. Consequently, the world economy cannot count on the sort of stimulus provided by the United States prior to the crisis.

China has been the other major engine of growth in the world economy since the turn of the millennium. Here, the share of labour compensation in income declined as well, but in a context of much faster overall income growth. Household disposable income and real consumption each rose at average annual rates of about 8 per cent over the past two decades. Thus, consumption and income growth in China were faster than in any other economy, either developed or developing, particularly over the past two years when many of the other economies recorded negative growth rates in these areas. Despite this, the share of household consumption in GDP in China fell due to that country's growth and development strategy. This strategy placed strong emphasis on investment and exports as the main drivers of economic growth, largely motivated by

China's relatively low level of per capita income when economic take-off began. Like consumption and income growth, employment growth in China has lagged behind the average annual growth rate of GDP of around 10 per cent over the past two decades.

In the United States, the slowdown in consumer spending between 2007 and late 2009 sharply reduced that country's imports of consumer goods, thereby contributing to a sizeable decline in its current-account deficit. This led to a fall – or at least considerably slower growth – of exports in a number of developing and emerging-market economies, particularly China. However, in China there are signs that faster growth of domestic demand could replace much, if not all, of the stimulus to economic growth and employment creation that had been provided by exporting to the United States in the past. The expansionary macroeconomic policy stimulus has succeeded in rapidly pushing the level of GDP beyond its pre-crisis peak, and GDP growth has returned to its high pre-crisis trajectory. Owing to this policy stimulus, China's imports have grown well in excess of its exports, resulting in a sharp decline in its external surplus. The structural shift in demand from exports to domestic consumption, while helping the Chinese economy recover from the crisis, also indicates a shift in China's future growth strategy. This will have a longer term effect on China's role in the world economy.

Taking the adjustments in the two large economies of China and the United States together, the analysis in this chapter suggests that the net effect for the world economy will be deflationary, but at the same time insufficient to bring about an unwinding of the large global imbalances. This is due to the



fact that not only the absolute value of the consumer goods bought by Chinese households but also their import content is much smaller than that of goods bought by United States households. Moreover, the composition of consumer goods imported by China differs considerably from that of the goods imported by the United States. As a result, there will be a tendency towards a deterioration in the trade balance of many other countries in the world economy, unless the necessary adjustments in the United States and the structural changes in China are accompanied by rebalancing efforts in other economies. On the other hand, primary commodity prices and the export prospects of many of China's trading partners may not be negatively affected by China's structural shift towards a stronger emphasis on domestic demand growth. This is because such a shift is unlikely to change the growth trajectory of China's imports of primary commodities as long as the pace of its overall output growth can be maintained.

Since world exports are set to decline, especially for industrial goods, with the largest declines likely to occur in the most labour-intensive industrial sectors, the net effect of adjustments by China and the United States could well have a sizeable adverse impact on employment worldwide. The impact will differ across countries, depending on their sectoral production and trade structure. In China itself employment would probably decline in most industrial sectors, but substantially increase in agriculture, utilities and services. In most developing countries, especially in Asia, negative employment effects are likely in labour-intensive sectors. Thus, apart from Japan, employment in countries such as Malaysia, the Republic of Korea, Singapore and Thailand may fall (or increase only very slightly). A positive employment impact in other sectors, particularly the extractive industries, will be comparatively weak, since those industries provide little employment. With regard to services, the Indian experience suggests that rapid expansion of modern, information technology-based business services is unlikely to create a large number of jobs,

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Some European economies could replace the United States' role in providing growth stimulus to the global economy ...

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... through expansionary monetary and fiscal policies and higher domestic consumption.

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and that these jobs require comparatively high skill levels (Nayyar, 2009).

The expansionary policy responses to the economic and financial crisis by both China and the United States have provided vital support to the global recovery. In particular, the vigorous rebound in industrial production led by China has contributed significantly to buoyant commodity prices, and hence to recovery in commodity-producing countries, both developed and developing, such as Australia, Brazil, Canada, the Russian Federation and South Africa. However, even if China were to further reduce the contribution of exports and increase

that of household consumption to output growth and employment, this adjustment still would not replace the stimulus to global growth that the United States provided in the past.

It needs to be re-emphasized that unbalanced growth among developed countries was the root cause of global imbalances prior to the crisis. Indeed, these imbalances were not a bilateral phenomenon between China and the United States. The peculiar form of uneven development brought about by the process of globalization cannot be ignored. The fact that in today's globalized world capital and technology are freely mobile across borders, while labour is not, has resulted in the targeted location of production for global markets in a selected (and changing) set of countries, motivated by lower labour costs and other locational advantages. In recent years, China has been the most popular among such destinations. In addition, its domestic firms have been importing technologies and developing the capabilities to produce for global markets. Not surprisingly, its exports have grown rapidly, along with a rising trade and current-account surplus. However, China's very large current-account surplus occurred only relatively recently: it rose sharply only after 2003, at which time it was still comparable to that of Switzerland.

However, it should be pointed out that low-wage developing countries like China are not the only

beneficiaries of globalization. Germany, for example, where innovation and technical progress were accompanied by stagnant or even falling real wages, has been able to increase exports both inside and outside the euro area. Several members of that currency area, that no longer have the possibility of currency devaluation to make their exports cheaper and imports more expensive, have found it increasingly difficult to compete with Germany and sustain their growth.

The two large industrialized economies of Germany and Japan have also recorded sizeable and more long-lasting current-account surpluses as a counterpart to the United States deficit. In 2007, the share of Germany in the aggregate current-account surplus worldwide was around 16 per cent, and that of Japan was 14 per cent. Both these countries have been notorious for slow growth of their domestic demand and they are again at the heart of imbalances among developed countries in the context of the current recovery.

The evolution of the current-account surpluses of the Russian Federation, Saudi Arabia and other oil-exporting countries has been determined largely by oil price developments; besides, the size of these countries' domestic demand is not large enough to influence global trade flows and employment creation. Moreover, the price of oil, like those of other primary commodities, is highly volatile, and, in the context of slower growth in the G-7 economies than in the past, the surpluses of these countries are likely to shrink anyway. Other countries that are often suggested as possible future markets for countries that pursue export-oriented growth strategies are some large emerging-market economies in the South, particularly India which has the second largest population in the world and has recorded fast and stable growth over many years (box 2.2). If domestic demand in these countries were to expand, it would certainly help to make their industrialization less dependent on export markets, and might also create a larger market for other countries that produce consumer goods. However, the import potential of

Brazil, India, Indonesia and South Africa combined is not even equivalent to that of Germany, and with the exception of Indonesia, these countries have not had current-account surpluses in recent years.

China has done more than any other emerging-market economy to stimulate domestic demand, and as a result its imports have expanded significantly.

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**Shifts in the demand structure in China are unlikely to adversely affect its primary commodity imports.**

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Private consumption rose by more than 15 per cent in real terms in 2009 and is forecast to rise by more than 20 per cent in 2010 (CLSA, 2009: 37), dwarfing attempts by all other major economies to revive their domestic markets. The Chinese economy is again growing vigorously and unit labour costs

have been rising more than elsewhere, which has undermined its competitive advantage, even with a fixed nominal exchange rate. Thus any additional contribution to global rebalancing will have to come from other major deficit and surplus countries. To the extent that it comes from other deficit economies, the impact will be deflationary, as it would have to rely on import retrenchment. Hence, to achieve a recovery of global output growth and employment creation without reproducing the large imbalances that had built up in the run-up to the crisis, the key element in demand management worldwide would have to be expansionary adjustment in the major industrialized surplus economies, namely Germany and Japan.

Japan suffered the sharpest GDP contraction among the large economies in 2009, owing to its export dependence. Its recovery since then has also been driven mainly by exports, together with some revival of private consumption. Due to only moderate growth in its former prime export market, the United States, Japan reoriented its exports towards East Asian markets, where demand has been growing rapidly following their brisk recovery. But Japan could make a much greater contribution to the recovery of global output and employment by

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**Developing countries should not rely on export growth alone – they should also give more support to domestic demand growth.**

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overcoming its deflation. Domestic demand in Japan is forecast to grow at a moderate pace of 1.5–2 per cent in 2010 and 2011 (OECD, 2010). In order to compensate for the sharp fall in the global demand

## Box 2.2

## GLOBAL REBALANCING AND THE INDIAN ECONOMY

India has benefited from the opportunities offered by globalization, mainly as an exporter of tradable services, while growth in its manufacturing sector has been driven primarily by domestic demand at much lower though creditable rates. India's manufacturing industry has grown much more slowly than China's, but growth was significant and relatively stable even after the Asian crisis of 1997. Over the three periods 1980–1989, 1990–1996 and 1997–2003 (the years after the Asian financial crisis), China's manufacturing value added grew at average annual rates of 2.1, 11.8 and 14.1 per cent respectively, whereas the corresponding figures for India were 5.6, 8.7 and 4.7 per cent.<sup>a</sup>

In India, during the period 1997–2003, fewer industries were as export dependent as those in China. All of these were traditional industries, such as apparel, leather goods and textiles. In most manufacturing categories (at the three-digit SITC level) exports accounted for less than one fifth of production. But apparent consumption (which takes into account imports) was significantly higher than domestic production, indicating a sizeable share of imports in domestic consumption. This can be attributed to the demand for imported luxury goods, resulting from trade liberalization, a growing middle and upper middle class of consumers and the inability of Indian producers to meet this demand. Therefore, India provides a market for a number of manufactured and semi-manufactured imports, and will continue to do so.

From this structural perspective, if growth remains high or accelerates further in India, it may have a positive effect on global demand. This means that India may play an equally (if not more) important role as China as a future engine of growth and employment creation in other countries. However, so far it is nowhere near being a powerful engine because of the relatively small size of its home market for manufactures and the rate of growth of that market, which falls well short of that of China. Moreover, India, unlike China, runs trade and current-account deficits in its balance of payments, and therefore growth of domestic demand in that country would not contribute to global rebalancing in the short term.

<sup>a</sup> UNCTAD secretariat calculations, based on Centre d'Etudes Prospectives et d'Informations Internationales (CEPII), *TradeProd* database.

stimulus of the United States, Japan's domestic demand growth would need to be significantly stronger to offset the temporarily negative growth contributions of its net exports, unless the adjustment is facilitated through a further yen appreciation.

Germany could compensate for a substantial share of the decline in the demand stimulus to the world economy through strong growth of household consumption and attendant expansionary effects in the rest of Europe. Europe's imports of consumer goods are relatively similar to those of the United States in terms of both size and product composition. But in Germany, even more so than in Japan, recovery until mid-2010 has been entirely export-driven, while

domestic demand, especially private consumption, has been shrinking. Moreover, there are no indications that Germany will shift its emphasis from export-led growth to domestic-demand-led growth any time soon, despite its dependence on exports, its low rate of investment and stagnant consumption in recent years. What was mentioned above about the requirements for a Japanese contribution to global rebalancing applies even more to Germany, where domestic demand is forecast to fall by 0.3 per cent in 2010 and to grow by only 1 per cent in 2011 (OECD, 2010).

With Germany's key European export markets hammered by spreading fiscal austerity, the country's

heavy export orientation is shifting towards markets in China and other developing countries. The sharp depreciation of the euro, driven by the region's home-grown crises and inadequate policy responses, may lend support to this strategy. However, this will not contribute to the needed global rebalancing, especially since Europe provides the major market for United States exports.

As mentioned, China cannot replace the United States' pre-crisis role of providing the growth stimulus to the global economy because of the size and composition of its imports. Major EU economies could fill this role, but it would require them to continue with their expansionary monetary and fiscal policy stance as well as increase domestic consumer demand, especially through wage increases in Germany. However, Germany's status as the main surplus economy in the euro zone has been built largely on wage restraint (see also chapter III) and its serious problem of unemployment also persists. Moreover, the stagnation of private consumption in Europe, exacerbated by the tendency for EU governments, especially the German Government, to hasten towards fiscal consolidation programmes makes it unlikely that a major contribution to global rebalancing and

a substantial stimulus for global output and employment growth will come from the European surplus economies.

This means that the developing-country exporters that had focused their export-oriented development strategies on the markets of the major developed economies should perhaps adapt to the new situation. China provides a leading example, not only of successful fiscal policy support to domestic demand for bridging the adjustment from export towards domestic demand orientation while sustaining a high rate of GDP growth, but also for the sustained rapid expansion of real private consumption based on strong productivity growth and two-digit level wage increases.

A reorientation towards private consumption, accompanied by a corresponding refocus on investment expenditure, would reduce developing countries' dependence on GDP growth in developed countries. How a reorientation of development strategies by which income growth and employment creation could be made to rely more on domestic demand than has been the case in the past is discussed in greater detail in the subsequent chapters of this *Report*. ■

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## Notes

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- 1 See China's 11<sup>th</sup> Five Year Plan enacted in 2006.
- 2 For a general discussion of the issues involved in moving from a current-account surplus to a more balanced external position, see IMF, 2010.
- 3 It should be pointed out that the sustainability of a deficit position depends very much on whether it is held by the government or the private sector. The dynamics of public debt affect the growth rate of aggregate income, but changes in households' indebtedness do not influence the course of their level of income. Moreover, the public sector can resort to the central bank and raise taxes in order to repay its debt, but households may be forced to default when their debt-to-income ratio increases (see also Palley, 2006).
- 4 Glick and Lansing (2010) show that large increases in household leverage (as measured by the ratio of debt to disposable personal income) and the housing bubble were not unique to the United States; they also occurred in other developed countries.
- 5 For further discussion on the development of income inequality and the relationship between income distribution and the maintenance of relative, rather than absolute, standards of consumption in the United States, see Barba and Pivetti, 2009.

- 6 Carroll and Slacalek (2009) use a different simulation model but arrive at similar conclusions. They also note that retail sales have declined particularly sharply, and considerably more than in any previous recession since the Second World War.
- 7 The adverse demand effect on the rest of the world would also occur if household consumption was replaced by government consumption. This is because much of government consumption relates to public sector service activities which have a low import content.
- 8 The current account is the sum of the trade balance, the balance on labour income, the balance on international investment income and unilateral transfers (foreign aid and remittances).
- 9 While the balance on unilateral current transfers has been slightly negative, the balance on income and on trade in services has been positive, so that the trade deficit exceeds the size of the current-account deficit as a whole (statistics presented in the text have been calculated from the Aggregate Income and International Transactions databases of the Bureau of Economic Analysis).
- 10 According to the Bank for International Settlements (BIS, 2007: 56) “final consumption goods constitute only 4% of China’s total imports and calculations suggest that the elasticity of demand for its ordinary imports (i.e. those not used for processing in the export sector) with respect to domestic spending is insignificant.”
- 11 For this analysis, consumer goods are identified on the basis of the United Nations Classification by Broad Economic Categories (BEC), codes 61, 62 and 63, which cover durable, semi-durable and non-durable consumer goods, respectively (United Nations, 1971). Using concordance tables, these codes were translated into 428 products at the 5-digit level of the Standard International Trade Classification (SITC), Revision 3. The import similarity index between two economies  $j_{1,2}$  is:
- $$100 \sum_i s(i, j_1) s(i, j_2) \left( \sqrt{\sum_i s(i, j_1)^2} \sqrt{\sum_i s(i, j_2)^2} \right),$$
- where  $s(i, j)$  is the share of good  $i$  in the imports of country  $j$ .
- 12 A similar view has been expressed by leading policymakers in China, such as Premier Wen Jiabao, and prominent Chinese academics such as Yu (2007) and Cai and Wang (2010), in addition to a wide range of international observers, including Blanchard and Giavazzi (2006), World Bank Beijing Office (2006), Aziz and Cui (2007) and Akyüz (2010).
- 13 According to Koopman, Wang and Wei (2008), those Chinese exports that are often labelled as “relatively sophisticated”, such as electronic devices, have a particularly high foreign content, corresponding to about 80 per cent of their nominal export value.
- 14 This figure results from combining the export data and employment coefficients in tables 2 and 3 of Feenstra and Hong (2007), which used employment coefficients from an earlier version of Chen et al. (2009). The estimated number of jobs may be rather low because official statistics exclude some migrant workers employed in export sectors. However, it is unlikely that an inclusion of such migrants would significantly alter this estimate.
- 15 This percentage corresponds to about 28 per cent of urban employment in 2002. However, it is most probably an overestimate, since it is unlikely that all the 70 million jobs were in urban areas to which the data on wage and salary employment refer. While this estimate is based on data for 2002, it is unlikely to have increased substantially in more recent years. This is because the increase in the share of exports in GDP since 2002 has in all likelihood been accompanied by an increase in the relative productivity of workers in the sector, so that the net effect on the share of employment in export industries will have changed only marginally.
- 16 This figure of one fifth is derived by adjusting downwards the world average ratio of exports to GDP (which is about one quarter) by the world average share of domestic value added in the gross value of exports, using data from Nicita and Olarreaga (2007). See *TDR 1998*, table 48, for an example of the many cross-country regressions that confirm that trade/GDP ratios decline with country size.
- 17 *TDR 2005* provides a more detailed discussion of these comparisons for the first 20 years from the start of economic take-off (i.e. for China between 1979 and 1999). The dates used here to determine the beginning of economic take-off are those of *TDR 2005*. They were determined through a breakpoint analysis of productivity growth series, measured by growth rates of GDP per worker, as is frequently used in the literature on catching up and integration (Maury and Pluyaud, 2004; IMF, 2004). These dates closely correspond to (but do not coincide with) the dates used by the IMF (2005) for growth take-off. However, the IMF study determines the beginning of economic take-off by the start of an economy’s rapid integration into international trade; it is defined by the IMF (2004) as “starting when the three-year moving average of constant-price export growth first exceeded 10 percent”.
- 18 A more innovative approach finds a close link between the increase in household savings and China’s one-child policy and the surplus of men, because it produced a highly competitive marriage market (Wei and Zhang, 2009).
- 19 For a detailed discussion of the data issues involved in these calculations, see also Aziz and Cui, 2007.
- 20 It should be noted that analyses of wage trends in China face “the lack of systematic, consistent

- aggregate data that cover wages and labor compensation over a wide basis and an extended period of time” (Yang, Chen and Monarch, 2009: 5). This is probably why headlines about double-digit growth rates of wages in China (e.g. JP Morgan, 2010; EIU, 2010: 27) frequently cause confusion: they refer to the 13 per cent growth between 1998 and 2007 or to the 12 per cent rate of growth in real wages between 2003 and 2009 calculated on the basis of data for *urban* wages and salaries. The problem with these data is not only that they exclude non-urban manufacturing activities (such as in township and village enterprise (TVEs)), where wages are much lower, but also that they mainly cover the urban workforce in SOEs, where wages tend to be higher than in the private sector (Yang, Chen and Monarch, 2009: 9). Perhaps the most detailed study on labour cost developments in China (Lett and Banister, 2009: 36), which takes into account both manufacturing urban units and manufacturing TVEs, found that between 2002 and 2006, employee compensation (including wages, social welfare contributions, housing and other benefits) in urban manufacturing units grew by an average annual rate of 12 per cent and in TVEs by 7 per cent; with two thirds of manufacturing employees categorized as TVE workers, “total manufacturing compensation in China more closely reflects the compensation costs of TVE workers than it does urban unit compensation costs.” Another study provides supportive evidence: it also indicates an average annual rate of real wage growth in urban manufacturing of about 11.4 per cent between 2002 and 2006, which significantly exceeds the increase of about 4.7 per cent for rural migrants during the period 2003–2006 (Park, Cai and Du, 2010).
- 21 According to international practice (such as followed in the United Nations System of National Accounts) the proceeds from self-employed work are treated as operating surplus (i.e. capital income), unless the self-employed receive wages from their own enterprises or unless individuals create their own enterprises. Given the difficulty in distinguishing between capital income and labour income in the proceeds from self-employed work, China’s national statistics used to categorize both as labour income (Aziz and Cui, 2007). One rationale for this might have been that in poor countries the self-employed tend almost entirely to provide labour services. This changed in 2003–2004: since 2004, the income of self-employed individuals engaged in non-agricultural activities has been counted as capital income (Bai and Qian, 2009a). As a result, more than half of the steep decline in the share of employee compensation (the orange line shown in chart 2.10) for 2004 was most probably due to this change in statistical reporting (Bai and Qian, 2009b).
- 22 According to standard economic theory, a high and increasing rate of investment and a growing capital intensity of production reduce the return on capital. As a result, the total income accruing to capital would decline and that accruing to labour would increase. This is the opposite of what happened in China. A possible explanation is that rapid technological progress accompanied the intensive use of capital and prevented additional investment from becoming less efficient.
- 23 The data series for total disposable income and labour compensation shown in this figure differ from those shown in the previous figures. This is because the evidence shown here reflects data based on national data, while that in the previous figures is based on aggregated provincial data. For a discussion of these data issues, see Bai and Qian (2009a); and Aziz and Cui (2007).
- 24 Recent reports in the media suggest that the lending policy of China’s largest banks may also have played a role in the resurgence of non-performing loans over the past few months (Anderlini, 2010).
- 25 A complementary measure relates to the unemployment trend. However, data available for China provide conflicting evidence of this trend: while data from the 2000 census and from the 2005 mini census point to a decline in unemployment, from 8.1 per cent to 5.2 per cent over this period of time, labour force survey data for the same period suggest that in 2002 there was a reversal of the initial decline in unemployment, but that, nonetheless, unemployment declined from 7.6 per cent in 2000 to 7 per cent in 2005 (Park, Cai and Du, 2010).
- 26 This evidence does not mean that China’s total labour supply is shrinking and that the country will be facing a labour shortage any time soon. On the other hand, the radically altered age structure of the labour force means that wages are almost certain to rise faster relative to productivity growth than they have over the past 20 years.
- 27 The first two of these three elements also underlie the simulation exercise in Zhang, Zhang and Han (2010), who otherwise focus on financial linkages, rather than the trade linkages emphasized in this chapter.
- 28 The set-up of the Global Trade Analysis Project (GTAP) model implies that external imbalances caused by an exogenous shock are removed and the external balance is restored by changes in the prices of primary factors, downwards to spur exports and reduce imports, or upwards to reduce exports and increase imports. The relationship between the prices of primary factors across different countries may be likened to an exchange rate. Real and nominal exchange-rate changes coincide because GTAP, as most other computable general equilibrium models, deals with real variables, with no money involved.

- 29 This analysis is based on the methodology proposed by Rajan and Subramanian (2006), who measure the labour intensity of a sector by the unweighted average across countries of the share of wages and salaries in value added for specific industrial sectors. The averages used here refer to the period 1995–2005 and cover all countries for which data are available in the *Industrial Statistics database* CD-ROM, 2009 of the United Nations Industrial Development Organization (UNIDO). The mapping of industrial sectors at the three-digit level of the International Standard Industrial Classification (ISIC) Revision 3 into the sectors used for the GTAP-simulations is based on the concordance table made available on the GTAP-website (<https://www.gtap.agecon.purdue.edu/databases/contribute/concordinfo.asp>). The data-points shown in chart 2.13 are unweighted averages based on a total of 10,210 country-sector observations of which 5,227 refer to developed countries, 4,573 to developing countries and 410 to transition economies. The distribution of the data-points in chart 2.13 changes only marginally if the period is limited to 2000–2005 or if averages are calculated only for developed or developing countries. The sample period ends in 2005 because no comprehensive data were available for more recent years.
- 30 There are two exceptions to this: (i) the category “machinery and equipment not elsewhere classified” includes, for example, machinery, domestic appliances, optical instruments, watches and clocks; (ii) the category “transport equipment not elsewhere classified” includes railway vehicles, aircraft and associated equipment, and ships and boats.

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