LDC challenges for the next decade: an analysis using UN DESA's Global Policy Model

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The impact of globalisation since 1970

As is well known, globalisation since the 1960s has resulted in growing dependence of trade, investment and domestic policies on global markets. This provided the context for high growth rates in many low and middle income countries in East Asia and more recently South Asia, giving rise to optimistic expectations about long-run convergence of living standards in these areas to match those achieved in the USA, Europe and Japan. Table 1 shows levels of income per capita in 1970 and 2008 and per cent changes over the period for a number of countries and country groups that together cover the entire world economy as will be explained in greater detail in the following section.

[Table 1 here]

The experience of globalisation has been more uneven in other middle income blocs including the CIS, West Asia, North Africa and Latin America which have not been able to capture important shares of dynamic world markets for manufactures and services and continue to rely, to a greater or lesser extent, on primary commodities or energy exports.

As for LDCs there was little convergence between 1970 and 2000. Despite the ongoing focus of attention of multilateral organisations and high income donor countries, average national income per capita increased by less than the world average in Asian LDCs and declined in absolute terms in non-energy-exporting African LDCs. Indeed, while world income per capita increased by an average of 100% over the last three decades of the 20th century, the average for African LDCs with a combined population of around 400 million declined from already very low levels as economic growth failed to keep up with population increase.

More recently in the period between 2000 and 2008 Asian and energy-exporting LDCs achieved higher growth rates while non-energy-exporting African LDCs achieved small positive gains in per capita income (see table 2). This can be attributed to rapid expansion of world trade in these years with rising prices of primary commodities and energy products as well as greater success of LDCs in integration with world markets.

[Table 2 here]

One of the most binding constraints on the progressive accumulation of capital by LDCs as well as on their current production activity and consumption expenditure is the availability of foreign exchange. Sources of foreign exchange are extremely limited in most LDCs. African energy exporters earn $500 per capita per year, comparable with other low income blocs that are not LDCs. But all other LDCs secure little more than $100 per capita per year (see table 3). In the case of non-energy African LDCs a major component in 2008 was capital inflow. Without this, foreign exchange availability would have been less than $90 per capita. No LDC appears as a significant exporter of services or primary commodities other than energy. The inflow of income and transfers including worker's remittances and all types of foreign aid was between $20 and $50 in 2008. In the same year middle-income regions of the world economy secured $1,500 to

$2,000 foreign exchange receipts per capita and high income blocs upwards of $5,000 per capita. The very low level of exports and inward remittances undoubtedly presents a major obstacle to development policies in LDCs.

[Table 3 here]

The economies of most LDCs are not significantly more closed than those of most other low and middle income blocs in the sense that they have similar levels of imports relative to GDP in most sectors. Total imports and outflows of profits and remittances represent 15-20% of GDP of LDCs. The exception is Bangladesh which, like India and other South Asian countries has imports equal to 7.5% of GDP (see table 4).

[Table 4 here]

LDCs have little money to spend on imported energy. This means they must operate with 300 - 450 kg of energy (oil-equivalent) per capita per year, less than half the level of other low income blocs and less than one-tenth the level of high income blocs where per capita energy use ranges between 5 and 10 tons per year (see table 5). African LDC energy exporters produce and export around 1.5 tons of oil and gas per capita per year but their energy production per capita remains lower than in all middle and high income blocs.

[Table 5 here]

The Impact of world recession, 2009-10

The onset of world recession in 2008 has inevitably had an adverse effect on economic growth and living standards in LDCs. Effects of declining exports combined with rising food and oil prices may have been particularly harsh for vulnerable groups in these countries.

But the negative impact of the world recession on GDP of LDCs is estimated by the IMF to have been smaller than in the USA and Europe where the recession originated and prospects for early resumption of a trend of rising per capita income in LDCs appear to be good.

The impact of world recession on exports has been of a similar order of magnitude in most parts of the world including LDCs, although energy exporters suffered a large reduction in export income in 2009 due to reversal of the 2008 oil price spike. The response of domestic demand and imports appears to have been much more variable.[1] In particular the response of domestic spending in low income blocs other than African LDC energy exporters seems to have been robust, perhaps because spending in these countries is less dependent on capital markets and financial institutions.

[Table 6 here]

Table 6 shows estimated changes in national income as well as GDP. The main difference between the two measures is that national income includes the effects on living standards of terms-of-trade changes such as the rise and fall of oil and commodity

[1] Inferences about the composition of demand in 2009-10 rely on comparisons of WEO estimates for GDP with estimates for balance of payments current accounts.

prices while GDP measures volume changes in the quantity of goods and services produced and sold.

Building productive capacities for long term growth and development

The vulnerability of LDCs to crises is partly rooted in their low level of product and export differentiation, financial development, and capacity to raise and mobilize domestic resources and accumulate physical and human capital. The factors that have limited LDCs capacity to address such vulnerabilities over time are mostly reflections of the global economic environment and international norms and agreements that are, to a greater or lesser extent, translated into domestic macroeconomic and structural policies. Recent events in global markets have clearly revealed systemic problems that affected development patterns in LDCs in the past few decades. These problems arise from faults in the theory, philosophy, institutions, policies and practices governing the global economy.

> "The crisis is not just a once in a century accident, something that just happened to the economy, something that could not be anticipated, let alone avoided. We believe that, to the contrary, the crisis is manmade: It was the result of mistakes by the private sector and misguided and failed polices of the public." (UN, 2009:7-8)[2]

The pattern of trade and financial globalisation in the last decade has clearly increased the openness and dependence of LDCs on the global economy. Openness and interdependence can be in principle a great source of opportunities if productive structures are strengthened and can develop in a continuous manner. However, in the absence of a policy focus and external environment that favoured increasing domestic resource mobilization and product differentiation, the increase in openness and dependence on the global economy has magnified the impact of external factors not only on short-run economic outcomes, but also on longer-run growth trajectories and policy options. Globalisation has not provided the more inclusive and equitable international trade and financial systems that would empower LDCs by providing them with instruments that they could use to build diversified productive capacities and reduce their structural vulnerabilities.

Productive capacities were defined in LDCR 2006 as "the productive resources, entrepreneurial capabilities and production linkages which together determine the capacity of a country to produce goods and services and enable it to grow and develop". Building productive capacity has to be the key policy goal for achieving sustained economic growth and sustainable development in LDCs. The development of productive capacities should allow increased reliance on domestic resource mobilization to finance economic growth, reduce aid dependence and attract private capital inflows of a type that can support the development process (UNCTAD LDCR 2006). The dynamic process of building productive capacities and integrating strategically into the global economy will enable LDCs "…to compete in international markets in goods and services which go beyond primary commodities and which are not dependent on special market access preferences."(UNCTAD LDCR 2006: i). Moreover productive capacities can be the way through which different forms of international support can alleviate

[2] UN (2009). *Report of the commission of expert of the president of the United Nations general assembly on reforms of the international monetary and financial system*

human suffering and achieve substantial and sustained poverty reduction by generating productive employment opportunities.

Building productive capacities requires new domestic policy orientation as well as a new international policy framework that favours such policies. A change in the philosophies, institutions, policies and practices governing the global economy are needed to support the creation of International Support Mechanisms (ISMs) that enable LDCs to pursue their development strategies. The New International Development Architecture (NIDA) based on ISMs can be the enabling policy framework for developing countries and in particular for LDCs.

While the fundamental ISMs are discussed in greater detail in the following chapters, it is important to highlight here what should be the main elements of a development strategy focused on productive capacity development.

As indicated in LDCR 2006 a paradigm shift is needed. NIDA and ISMs should support domestic policies that include elements such as: (i) a production- and employment-oriented approach to poverty reduction which would encompass, rather than be narrowly focused on, increasing social sector spending and achieving human development targets; (ii) a development-driven approach to trade rather than a trade-driven approach to development; (iii) macroeconomic policies oriented to promoting growth, investment and employment; (iv) a multi-level approach which not only seeks to set the framework institutions and macroeconomic environment but also includes policies to change meso-level production structures and institutions and micro-level capabilities and incentives; (v) an active approach to promoting entrepreneurship; (vi) a strategic approach to global integration in which the speed and degree of liberalization in different economic spheres takes account of the goal of developing productive capacities (see LDCR 2006).

This new orientation of domestic policies can be realized by implementing a set of macroeconomic and structural policies that are specific to country circumstances and to the current external environment. Macroeconomic and structural policies that aim at increasing per capita income can be targeted to specific growth factors such as sustaining aggregate demand, investment in infrastructure, export diversification and growth of domestic industries and services. These policies can succeed to the extent that they are able to generate dynamic linkages between internal and external sources of demand, physical and human capital accumulation, productivity increases and a wider distribution of income.

While the development of productive capacities is favoured by an appropriate international development architecture, national policies need to be supported by global international support mechanisms operating in the macroeconomic, financial and trade context and specific measures targeted on LDCs.

This section uses a global policy model (GPM) developed for UN DESA (see box 1) to review the experience of LDCs over the past 40 years and their prospects in the coming decade. The model provides a tool that can be used to examine the implications of interdependence between different country groups including spillover effects of economic policies and potential benefits of cooperation. The model relies on annual time-series for all countries covering the period 1980-2008, adjusted to ensure consistency for each country and satisfy accounting identities for the world as a whole. For the purposes of analysis and simulation the GPM aggregates countries into blocs, the following groupings being used for LDCs in the present exercise: African energy exporters, Bangladesh, Other Asian LDCs and Other African LDCs (see box 2).

[Box 1 here]

[Box 2 here]

Country bloc populations relative to the world total and income per capita of LDC blocs are reported in tables 7 and 8, respectively.

[Table 7 here]

[Table 8 here]

The global context 2010 - 2020

Before considering possible policy initiatives to increase growth of income in LDCs, we may first examine prospects up to 2015 and 2020 extrapolating from past experience. Three scenarios illustrate the potential variety of global contexts affecting LDCs:

- baseline: scenario with global resumption of growth from 2011 onwards
- delayed recovery: a scenario with slower growth as governments in Europe and the US cut spending and increase taxes in response to high levels of government debt
- further crisis: another repeat recession episode in the second half of the coming decade (see box 3).

[Box 3 here]

Baseline

The baseline projection presents an optimistic view of development in the coming decade that should provide an opportunity for substantial improvements in LDCs. The other scenarios represent less favourable conditions of a kind that have occurred periodically in the past and will no doubt occur again from time to time in the future. The less favourable alternatives will be used as stress tests to evaluate vulnerability of development strategies in LDCs and as a basis for consideration of conditional assistance that might be provided by international support mechanisms.

The baseline and stress test projections assume continuation of existing bilateral and multinational policies including ODA and support for specific people-related improvements such as the Millennium Development Goals. In keeping with policy advice by the international community in recent decades, the projections do not assume any new macro-economic or monetary initiatives.

The global baseline shows population growth reducing slowly to 1% per year while income per person grows at around 4% per year implying a 50% cumulative increase in the world as a whole over the decade. Although government debt in the world as a whole is estimated to have increased to a level of 68% of global GDP in 2010 and may increase further in the next year or two, the resumption of quite rapid economic growth is projected to result in reducing fiscal deficits and falling ratios of debt to GDP thereafter bringing the global average ratio of government debt to GDP below 50% in 2020 without any special measures to cut government spending or increase taxes.

Prices of primary commodities, oil and exports of manufactures rise relative to domestic expenditure and growth of world trade as a whole is slower than in past decades. Energy efficiency as measured by energy use per constant ppp $ of GDP improves by around

3% per year. Total primary energy production, measured in billion tons of oil equivalent, increases at the same rate as in the past - i.e. about 2% per year (see table 9).

[Table 9 here]

Prices of oil and primary commodities relative to prices of goods and services in general are projected to rise significantly, increasing by 34% (oil) and 23% (commodities) over the decade.

Table 10 summarises the baseline projection for LDCs assuming the global context outlined above and development policies similar to those followed in the past. Per capita exports of African energy exporters and Bangladesh are projected grow as fast or faster than in other parts of the world, permitting income per capita to grow at around 5% a year which is significantly faster than the rate of growth expected in high income countries. African energy exporters are projected to accumulate a significantly positive net external position while Bangladesh balances its external position and reduces government debt to 15% of GDP in 2020 (see table 11).

[Table 10 here]

[Table 11 here]

Despite some overall improvement in macro-economic performance, average national income per capita in 2020 measured at around $3,400 in 2000 ppp for African energy exporters and $2,300 for Bangladesh will still be a small fraction of the average for the world as a whole ($12,800) and less than one-tenth of the average for high-income blocs ($35,700).

The baseline is less optimistic for other LDCs. Exports of primary commodities and services are projected to grow more slowly than in other parts of the world, implying that average income levels will lag further behind, particularly in African LDCs where the average income level is expected to show little or no increase, remaining at around $850 per person in 2000 ppp. Government debt is projected to remain at around 70% of GDP in African LDCs and net external positions are expected to become increasingly negative reaching nearly 90% of GDP for the Asian group and no less than 150% of GDP for the African LDCs. To put this another way, the projected baseline outcome relies on an assumption that these countries will be able to borrow increasing amounts in order to cover rising current account deficits. If such finance is not available, their growth performance in terms of GDP and income per capita would inevitably be worse and it is possible that further substantial declines in living standards will occur in many very-low income countries in Africa.

Stress tests

The first stress test to be considered here is a "delayed recovery" scenario that differs from the baseline discussed above because of progressive fiscal policy adjustments in the US and Europe aimed at reducing budget deficits to 3% and 2% of GDP respectively and bringing down the ratio of government debt to GDP. One rationale for such policies would be the need to mitigate the burden of debt service when interest rates return to more normal levels.

The second stress test is a "further crisis" scenario that assumes another collapse of confidence starting in 2015 that leads to a worldwide contraction of trade and investment in the next two years followed by a recovery in 2018-19.

The attempt by governments in Europe and the US to reduce government deficits through fiscal policy adjustment is projected to have a strongly negative impact on world income, trade and commodity and oil prices. The negative effects on GDP in the first few years would be sufficient to cause the global ratio of government debt to GDP to rise from 68% in 2010 to 80% in 2015 before eventually declining to 46% in 2020, about the same level as in the baseline projection. Although the world economy would broadly recover by 2020, the negative impact on income, trade and commodity and oil prices compared with the baseline is estimated in the range 12-18% .

The impact of a repeat recession in the second half of the decade would be somewhat less severe except that there would be another round of government deficits and debt increases, leaving the debt/GDP ratio in 2020 at around the same level as 2010 (see table 12).

[Table 12 here]

Vulnerability of LDCs is illustrated by the outcome of the two global stress tests reported in table 13. Delayed recovery from recession substantially reduces income growth up to 2015 in the more dynamic LDCs, Bangladesh and energy-exporting African countries but this effect is largely reversed by 2020. There is less impact on income in other Asian and African LDCs over the same period as their growth is less dependent on exports. The scenario with a further crisis in the second half of the decade has similar proportionate effects on LDCs as on other blocs, resulting in lower exports and higher government debt in 2020 although income levels would have recovered to near-baseline levels.

[Table 13 here]

LDC strategies for accelerated development

In the remainder of this chapter the GPM is used to illustrate potential benefits and problems associated with different policies that might be undertaken by LDCs to promote faster growth of income and reduce vulnerability to global economic risks. International support mechanisms have a crucial role to play by facilitating global economic stability, affording more inclusion and equity in global trade and financial systems and providing specific forms of trade and financial support to LDCs.

It is worth pointing out that the number of possible cases to be considered is substantial. We shall examine three types of policy intended to promote faster growth and reduce vulnerability. The potential impact of each type of policy in the four groups of LDCs must be considered in three different global contexts (baseline and two stress tests) over two horizons, medium-term (2015) and longer-term (2020). Although the results will exhibit some regularity they will certainly be different for each group of LDCs and each type of policy. We do not expect to find one recipe that suits all.

Before describing the accelerated development strategies investigated in this article, it is necessary to make some comments about the way in which policy innovations are represented in the GPM. Since the model is macro-economic in character, relying on internationally available data and covering all regions of the world, it is not feasible to represent government policy instruments individually and explicitly. Instead the model calibrates the potential influence of policy on the observable behaviour of macro-economic variables. Thus fiscal policy is expected to influence government revenue and expenditures, monetary policy may influence interest rates, credit expansion, external capital flows and exchange rates while exports and imports are subject to the influence of industrial policies and trade policies including export taxes, tariffs and non-tariff regulation.

For each behavioural variable, the model specifies a normal pattern of response to initial conditions and other variables. Departures from the normal pattern, whether caused by policy initiatives or other factors such as changes in institutions, resources or expectations appear as residual add-factors in the historical movement of each variable. For the purposes of scenarios it is assumed that policy innovations may be capable of changing or overriding the normal pattern of behaviour, modelled by the insertion of add-factors calculated to achieve a desired objective or follow a particular rule. The scope for policy changes to modify behaviour is limited by constraining calculated add-factors to remain within bounds set by observed volatility of historical residuals for the variable and country group.

This procedure allows for greater or lesser rigidity of institutions and rules of behaviour in different blocs. The appearance of flexibility, indicated by relatively large historical variation of residuals, may be an indicator of instability of behaviour or a measure of the influence of changing policies. Therefore when specifying policy scenarios it is necessary to exercise judgement when specifying limits to the potential influence of policies with respect to each policy variable.

With the above understanding about how policy innovations are represented in the GPM, we may now proceed to consider the definition of different strategies that might be chosen by LDCs as a means for improving living standards and accelerating economic growth.

The following types of policy are examined in the remainder of this article:

- government spending: accelerated growth of government expenditure to stimulate domestic demand

- infrastructure: accelerated investment in social and physical infrastructure through government and private investment to promote growth of GDP and exports

- export diversification and expansion: industrial and trade policies giving priority to expansion of the export base.

Each type of policy is represented in simulations by changes in behaviour of specific variables listed in box 3. The purpose of the simulations is to examine the feasibility, potential benefits and problems associated with each type of policy in quantitative terms as a basis for considering international support mechanisms that might improve feasibility or reduce problems associated with each. There is no presumption that governments of individual LDCs will or should choose any of the specific strategies examined here. In practice they will select a mix of these and other policies, depending on their judgement of priorities and feasibility.

[Box 3 here]

To facilitate comparison of results of different types of policy, the same targets for accelerated growth of income per capita will be assumed in each simulation. The targets shown in table 14 are based on extrapolated population growth plus income per capita growing 2% p.a. faster in 2010-15 than in the preceding decade and 2% p.a. faster again in 2015-20. Implied growth targets for national income are shown in the bottom line of the table.

Specific objectives for relevant policy variables are specified below in terms of target income growth with a given offset (e.g. +1% p.a.) or in other cases, as ratios to GDP. Scenario definitions in the GPM set a limit to the scale of policy intervention with respect to each policy variable, calibrated with respect to the volatility of residual effects observed in the past. If a target can only be achieved by interventions in excess of the specified limit, the target is deemed to be infeasible and the outcome for the variable in question will diverge from the target as will be apparent in tables below that report simulated results of applying each policy.

[Table 14 here]

Accelerated government spending

Table 15 reports the results of simulations with government spending on goods and services in LDC blocs growing at the same rate as the long-term income growth rate required to achieve targets for income per capita discussed above. In all cases the targets require a considerable improvement in performance relative to recent history (2000-10) and baseline projections with unchanged policies.

The first point to note is that the target growth rates of government spending shown in the table are found to be feasible for all four LDC blocs except African non-energy LDCs where growth of government spending starts to fall short of the target in the second half of the decade (2015-20) due to an accumulating burden of debt and worsening current account.

The biggest growth acceleration is that for Asian LDCs other than Bangladesh where annual growth of government spending would be increased from 6.6% in the past decade to 12.1% between 2010 and 2020. The projected outcome is 6% p.a. growth of income per capita which is significantly better than the baseline but still well short of the 9% target assumed for this group.

Targets for other LDC blocs are less demanding and more nearly achieved. African energy exporters secure around 8% p.a. growth of income per capita with an increase of 3.3% in annual growth of government spending. Other African LDCs achieve around 5% p.a. growth of income per capita with a 3% p.a. increase in growth of government spending. Bangladesh secures 6.7% p.a. growth of income per capita with a 2.3% increase in growth of government spending. In all cases there is some shortfall relative to the assumed target but the shortfall is not so large.

[Table 15 here]

Accelerated government spending implies higher budget deficits and ratios of government debt to GDP in all four LDC blocs with one exception, African non-energy LDCs in the period to 2015, for which the debt/GDP ratio falls relative to the baseline projection due to a strong response of GDP and government revenue. By 2020 the African energy exporter bloc has a budget deficit equal to 13% of GDP and a debt/income ratio of 60% while other African LDCs have a 9% budget deficit and 75% debt/income ratio. It is questionable whether the policy of accelerated government spending would be sustainable in these cases without increasing external financial support (see table 16).

[Table 16 here]

Accelerated government spending does not have too much effect on current accounts and external positions of the LDC blocs, considered relative to GDP (see table 17). There is almost no change in the ratios for Bangladesh and in the case of African energy exporters there is some reduction in current account surpluses and accumulation of external assets. Other Asian and African LDCs show some weakening of current accounts together with a reduction in net external liabilities relative to GDP as higher GDP growth rates offset the increase in current account deficits.

[Table 17 here]

Results of stress tests for accelerated government spending in LDC blocs are reported in the Appendix (see table A1). They show that delayed global recovery or a repeat recession would have significant effects on per capita income in African energy exporter LDCs in the short run because of downswings in the price of oil but the effect would be weaker than in the absence of the accelerated government spending policy. Impacts in other LDC blocs in 2015 and in all LDC blocs in 2020 are very small and in this sense the accelerated government spending policy may be judged robust with respect to global stresses. However the ratio of government debt to GDP and net external position of LDC blocs are more vulnerable. This is a case where the availability of international support for LDCs in the event of global downturns or recessions might prove very helpful in making it possible for LDCs to maintain the momentum of development and income growth.

Accelerated infrastructure investment

Scenarios for accelerated infrastructure investment in LDCs complement increased spending on government services with increased investment by state enterprises, corporations and households focussed on social and physical infrastructure, stimulating production for the domestic market and improved export performance. Typical instruments for achieving higher investment include industrial policies, credit and tax incentives.

Objectives for government spending and infrastructure investment are found to be feasible for all LDC blocs and this broader programme comes closer to achieving per capita income targets for Asian LDCs and non-energy African LDCs (performance for African energy exporter LDCs is about the same as in the previous case; see table 18).

[table 18 here]

The disappointing baseline projection for other Asian and African LDCs implies low growth rates for investment. Therefore these countries are projected to benefit more strongly from an emphasis on accelerated infrastructure development generating multiple benefits including faster growth of domestic demand and a significant increase in exports (see table 19).

[Table 19 here]

The broader programme of accelerated infrastructure investment also has significant benefits in the form of larger reductions in the ratio of government debt to GDP and, in the case of non-energy African LDCs, a larger reduction in the ratio of net external liabilities to GDP. But despite this improvement, net external liabilities of non-energy African LDCs still accumulate to around 100% of annual GDP by 2020, having increased steadily throughout the decade. This again casts doubt on feasibility of the targets for the lowest income group of LDCs.

Results of stress tests for accelerated infrastructure investment in LDC blocs, again reported in the Appendix, are very similar to those for accelerated government spending alone (see table A2). There are short-run impacts on exports, external positions and, in the case of African energy exporters, income per capita but longer-run impacts of delayed global recovery or a repeat recession are in general small. The accelerated infrastructure investment policy may be judged robust with respect to global stresses, particularly if international support is available to cushion short-term effects of global downturns or recessions.

Export diversification and expansion

The assumed objective for export-led growth policies is a growth rate of total exports that is 3% p.a. higher than the desired long-run growth rate of national income. Simulations assume a variety of incentives applied across the range of export industries including primary products and energy as well as manufactures and services.

Given that industrial and trade policies take time to work through, the objective in each year is to close the gap between prior-year performance and the target growth rate by one-third. Table 20 indicates that the export target is nearly achieved by each bloc in the second half of the decade but there are substantial gaps in the first half of the decade when export growth is accelerating.

Despite the delay in accelerating exports, national income per capita in Bangladesh comes to within 6.4% of the 2020 target. Other LDC blocs are further from their income targets but still achieve large improvements relative to the projected baseline outcome. The biggest improvement is achieved by non-energy African LDCs (42% above baseline).

[table 20 here]

Table 21 shows the pattern of projected export improvements for each LDC bloc. By 2020 African energy exporters achieve total per capita exports of $1,160 in year 2000 international purchasing power, with significant gains in manufactures and services as well as energy. Other Asian LDCs export $240 per capita with gains in primary commodities, manufactures and services. Exports per capita of Bangladesh reach $150 which represents a 50% improvement over the baseline figure with improvements concentrated in manufacturing. Other African LDCs reach $120 exports per capita, a 60% improvement over the baseline, with gains concentrated in manufactures.

[table 21 here]

Export-led growth policies induce substantial increases in investment in most LDCs and result in large reductions in the ratio of government debt to GDP. External positions of blocs with large net liabilities (other Asian and African LDCs) improve greatly. Net liabilities of other African LDCs in particular are reduced from 145% of GDP in 2020 in the baseline case to 48% in the case of export-led growth policies (see table 22).

[table 22 here]

Unsurprisingly, delayed global recovery or a further recession, reported in detail in the Appendix (See table A3), are projected to reduce the effects of export-led growth policies on exports, income per capita and external positions of debtor blocs substantially. The exception is Bangladesh which according to the model simulations would be capable of offsetting some deterioration in global conditions by intensifying export promotion policies.

Infrastructure, export expansion and balanced demand

A combination of infrastructure development and export expansion policies represents a more balanced policy package that complements attention to dynamic sources of demand, improving external sustainability and creating productive linkages and economies of scale, with the need to expand domestic industries and services and create effective domestic infrastructures.

Such combined packages are generally more effective than the individual policies reviewed above. Nevertheless the impact is projected to be somewhat weaker for African energy exporter LDCs and Bangladesh which have better baseline development prospects, and stronger for other Asian and African LDCs for which baseline prospects are not so good (see table 23).

[table 23 here]

In the case of the former groups, there is a significant boost to private investment, government debt is projected to remain constant or decline slightly as a ratio to GDP and the external position is projected to show a rising ratio of net assets to GDP. Bangladesh comes to within 1.5% of the 2020 income target and African energy exporter LDCs exceed their 2020 target by 2.5%.

In the case of other Asian and African LDCs private investment increases by more than 100% as compared with baseline projections and government debt falls to less than half its former level relative to GDP. But the external position still shows net liabilities in the range 30-70% of GDP that would almost certainly require international institutional support to avoid credit problems and interruptions to development programs. Other Asian LDCs come to within 3% of the 2020 income target and other African LDCs exceed their 2020 target by 7% (see table 24).

[table 24 here]

The combined policy packages comes nearer to achieving income targets than each policy separately. Policies of demand expansion and infrastructure investment boost income growth by 0.4-0.8% per year for Bangladesh and over 2% per year for the other LDC groups as compared with export promotion alone. Or looking at the matter the other way round, export promotion policies boost GDP growth by 0.3-0.6% per year in Bangladesh and between 0.5 and 1.5% per year for the other LDC groups as compared with policies of demand expansion and infrastructure investment alone.

Conclusions

The average level of national income per capita in LDC blocs is shown in table 2 above. It is immediately apparent that LDCs with a population of nearly 800 million persons have very low levels of national income per capita even when measured in purchasing power units. This necessarily implies very low levels of investment and government services as well as household income and consumption.

LDCs lagged behind in the three decades starting from 1970 and only started to catch up significantly in 2000-8. Bangladesh and African energy exporters may now have a sufficient positive dynamic to continue catching up in the coming decade. The prospect for other Asian LDCs is more uncertain. African LDCs that are not energy exporters have achieved little or no increase in per capita income over the past 40 years and are likely to lag further behind in the next decade. These countries have minimal resources and large external debt relative to income and it is hard to see how they can increase per capita income without external support. In a baseline simulation with very little income growth, debts of non-energy African LDCs are projected to increase steadily relative to GDP with net liabilities reaching 140% of annual income by 2020.

After the favourable period of global growth prior to 2008 LDCs have experienced setbacks as a result of the current recession. On the whole LDCs realise benefits from sustained growth of world trade which expands export markets and gives ongoing incentives to producers but they remain vulnerable to sudden increases in prices of imported energy, food and raw materials. Downturns in world income and trade are more widely damaging because of depression of export markets and farm prices. Thus prospects for LDCs in the coming decade depend to a large extent on resumed expansion of the world economy without too much delay in recovery from the current recession or the onset of another recession later in the decade.

The main objective for LDCs must be to achieve substantially higher, sustainable growth rates that will allow them to catch up at least with other low and middle income regions of the world in coming decades. This article examines three types of policy that might be used by LDCs to accelerate income growth. Each as well combination of them contributes to the progressive development of productive capacities while sustaining aggregate demand.

In model simulations an ambitious objective is set for accelerated growth of income in each of the four groups of LDCs distinguished here. The objective is a 2% improvement in growth of income per capita in 2010-15 relative to the past decade (2000-10) and a further 2% acceleration in 2015-20 bringing the long-term per capita income growth rate to 9% p.a. for African energy exporters, 8.5% for Bangladesh, 10% for other Asian LDCs and 7% for other African LDCs. These objectives for LDCs compare with an expected per capita income growth rate of around 4% in the world as a whole and 2-3% in high income countries. But although this would represent a breakthrough as compared with recent decades, income per capita in 2020 would still remain below $3,000 in most LDCs and below $1,500 in non-energy African LDCs. Simulations are then calculated for each type of policy to provide indications of feasibility of the scale of policy intervention, the degree of success in accelerating income growth, and potential side effects such as increased deficits or levels of debt that might make the policy untenable. Each type of policy is simulated separately to give a clearer idea of the implications for different groups of LDCs.

The article does not attempt to assess which types of policy or combination of policies will or should be adopted by different groups of LDCs. But in addition to the detailed assessment of each type of policy in later sections of the article, there are some general features of the results that can usefully be summarised here.

1. Demand expansion through accelerated growth of government spending is the most certain way to promote income growth in LDCs. This is not likely to result in large increases in the debt/GDP ratio as tax revenues and GDP itself will grow faster in response but it will tend to compound external debt problems that, especially in the case of non-energy African LDCs are already very severe. A large programme of external grants to support domestic government spending would be necessary to make this policy viable for most African LDCs.

2. A more broadly based demand expansion through accelerated growth of government spending and private investment focussed on social and physical infrastructure improvement has the same potential to promote income growth in LDCs and will improve prospects for exports. This will increase the benefit to GDP and tax revenues and reduce external deficits and the accumulation of external debt and may be a good strategy for LDCs that start with good external positions. But this policy alone is unlikely to be able to rescue LDCs with large external debts and weak export prospects from their current predicament.

3. Industrial and trade policies designed to promote exports in all sectors have a good chance of reducing external deficits and accelerating GDP growth and tax revenue, implying lower ratios of government debt and external liabilities to GDP. The benefits to per capita income may be less than in the case of domestic demand stimulus but the risks also appear to be much less, especially for non-energy African LDCs. The simulation for this type of policy shows external liabilities in 2020 being reduced from over 140% of GDP in the absence of policy initiatives to less than 50% of GDP. There is still an increase in external debt relative to GDP along the way, especially in earlier years, implying that external financial assistance may still be a necessary condition for viability of this approach in highly indebted LDCs.

4. Not surprisingly, the most effective approach to accelerated growth of production and income is likely to be a combination of demand expansion, infrastructure investment and export promotion providing a broad range of development opportunities for public and private institutions in different regions of each country. Although such policies have significant domestic and external costs, the cumulative benefits to production, trade and government revenue generated by consistent application of domestic policies over the medium term mean that the policies will eventually finance themselves as government debt and external debt fall relative to GDP.

Finally, after considering policy options available to LDCs, it should be noted that external constraints are particularly important for Asian LDCs other than Bangladesh and non-energy African LDCs that still have very low income and minimal export earnings. Therefore from a macro-economic perspective the most important functions that could be performed by international support mechanisms appear to be assistance with development of export industries and export promotion, grants to cover government budget deficits and allocations of SDR's or other international assets to increase exchange reserves. A significant improvement in income per capita in low-income LDCs over the coming decade will require substantial external assistance of this kind.

Tables and Figures

Table 1 Per capita income in 1970 and 2008: high, middle and low income blocs

Bloc	2008 population (million)	National income per person ($ ppp)		
		1970	2008	% increase
World				
Total	6,746	4,351	8,561	97
LDCs				
African energy exporters	94	1,343	2,313	72
Bangladesh	160	909	1,276	40
Other Asian LDCs	127	1,033	1,155	12
Other African LDCs	421	907	792	-13
Other low income blocs				
China	1,315	301	4,911	1,531
South Asia	1,378	733	2,461	236
East Asia low ncome	352	858	2,771	223
Other Africa	329	2,176	2,859	31
Middle income blocs				
CIS and other	284	5,595	10,315	84
West Asia and North Africa	414	3,457	9,589	177
Latin America	571	5,037	9,229	83
East Asia middle income	184	1,174	5,418	362
High income blocs				
USA	316	18,434	36,846	100
Europe	524	11,235	24,460	118
Japan	127	12,252	27,418	124
Other developed	148	8,365	26,781	220

Table 2 Change in income per capita of LDC blocs in each decade, 1970-2008

% change in national income per person over period				
	1970-80	1980-90	1990-2000	2000-2008
African energy exporters	4	-2	-5	78
Bangladesh	-30	13	23	44
Other Asian LDCs	-21	-32	23	69
Other African LDCs	-8	-13	-15	28

Table 3 Sources of foreign exchange, 2008

Sources of foreign exchange, 2008 ($ per capita)							
	Primary commodities	Energy	Manufactures	Services	Income & transfers	Capital a/c (net)	Total
LDCs							
African energy exporters	11	517	12	29	58	-100	526
Bangladesh	8	0	54	7	50	-20	100
Other Asian LDCs	26	16	40	24	25	30	160
Other African LDCs	28	3	21	18	20	42	131
Other low income blocs							
China	26	15	749	86	84	-106	854
South Asia	18	17	73	51	47	18	224
East Asia low income	107	89	218	55	72	-38	503
Other Africa	91	270	161	61	90	-40	632
Middle income blocs							
CIS and other	175	1185	467	235	284	-239	2108
West Asia and North Africa	85	1500	559	285	179	-645	1964
Latin America	321	274	555	145	164	53	1512
East Asia middle income	308	272	1227	296	138	-169	2071
High income blocs							
USA	428	144	2516	1257	1792	1633	7770
Europe	888	633	6957	2535	3609	167	14789
Japan	76	50	3914	766	1338	-879	5265
Other developed	1036	1416	7878	2010	1760	-150	13950

Table 4 Uses of foreign exchange, 2008

Uses of foreign exchange (cents per $ ppp income)						
	Primary commodities	Energy	Manufactures	Services	Income & transfers	Total
World						
Average	2.1	3.4	14.3	4.6	5.9	30.4
LDCs						
African energy exporters	1.7	0.9	7.0	5.7	7.4	22.8
Bangladesh	2.2	0.8	3.3	1.2	0.3	7.9
Other Asian LDCs	2.0	2.0	7.3	2.2	0.4	13.9
Other African LDCs	2.0	2.3	7.5	3.8	1.0	16.6
Other low income blocs						
China	2.4	2.0	10.0	2.2	0.7	17.4
South Asia	0.7	2.4	4.0	1.4	0.6	9.1
East Asia low ncome	2.1	4.0	7.1	3.1	1.9	18.1
Other Africa	2.1	2.5	10.3	4.4	2.8	22.1
Middle income blocs						
CIS and other	2.1	1.7	9.3	3.2	4.1	20.4
West Asia and North Africa	2.1	1.5	11.4	3.8	1.7	20.5
Latin America	1.2	1.7	9.3	2.2	2.1	16.4
East Asia middle income	2.8	4.6	20.8	6.7	3.3	38.2
High income blocs						
USA	0.8	3.2	9.5	2.7	4.9	21.1
Europe	3.9	5.0	26.3	9.4	15.9	60.5
Japan	2.1	4.5	7.4	3.5	1.6	19.2
Other developed	2.6	7.1	27.2	7.9	7.3	52.1

Table 5 Primary energy production and use, 2007

Bloc	Primary energy (tons of oil equivalent per capita)			
	Production	Exports	Imports	Domestic use
World				
Total	2.8	0.0	0.0	2.8
LDCs				
African energy exporters	1.8	1.5	0.1	0.4
Bangladesh	0.3	0.0	0.0	0.3
Other Asian LDCs	0.4	0.1	0.0	0.3
Other African LDCs	0.4	0.0	0.0	0.4
Other low income blocs				
China	2.1	0.1	0.2	2.2
South Asia	0.6	0.0	0.2	0.7
East Asia low income	1.1	0.5	0.1	0.7
Other Africa	1.9	0.7	0.2	1.4
Middle income blocs				
CIS and other	9.4	2.7	0.5	7.3
West Asia and North Africa	6.2	3.1	0.5	3.6
Latin America	2.5	0.7	0.3	2.1
East Asia middle income	2.2	0.7	0.6	2.1
High income blocs				
USA	9.0	0.4	2.7	11.3
Europe	3.8	1.4	3.0	5.4
Japan	2.1	0.1	3.7	5.6
Other developed	8.9	3.8	4.1	9.1

Table 6 World recession, 2009-10

(changes, % p.a.)

	Domestic demand		Exports of goods and services		Imports of goods and services		GDP		National income	
	2008-09	2009-10	2008-09	2009-10	2008-09	2009-10	2008-09	2009-10	2008-09	2009-10
LDCs										
African energy exporters	-6.4	10.5	-0.5	3.9	-14.8	12.6	1.1	6.1	-14.4	15.2
Bangladesh	5.3	5.5	-4.9	0.4	-3.5	2.1	5.4	5.4	5.3	4.1
Other Asian LDCs	4.1	6.0	-7.0	-3.1	-3.1	2.1	4.3	5.4	4.9	5.2
Other African LDCs	4.7	4.7	-5.7	-0.2	0.4	1.7	4.3	4.9	5.6	3.7
Other low income										
China	13.8	9.1	-11.7	3.5	0.1	3.7	8.5	9.0	12.0	10.5
South Asia	5.1	4.5	-5.8	3.0	-1.7	-1.8	4.9	6.0	5.7	4.3
East Asia low income	4.6	7.8	-4.2	-1.1	-2.3	6.2	3.1	4.3	5.1	6.9
Other Africa	-1.2	4.6	-6.2	-0.8	-8.8	3.5	-0.1	3.1	-4.9	5.3
Middle income										
CIS and other	-13.5	5.0	-6.3	0.6	-18.2	6.3	-7.0	2.1	-14.4	6.6
West Asia and North Africa	0.8	5.5	-9.4	1.6	-6.0	5.8	-0.2	4.1	-9.8	9.5
Latin America	-3.9	3.5	-4.4	-1.1	-8.3	2.1	-2.8	2.8	-4.0	3.5
East Asia middle income	-3.8	7.5	-5.1	1.4	-7.2	5.9	-2.3	3.5	-3.4	5.3
High income										
USA	-4.1	0.2	-1.9	7.0	-10.4	-2.2	-2.7	1.5	-1.9	0.6
Europe	-5.3	1.3	-17.2	-0.4	-20.0	1.8	-4.0	0.5	-4.5	0.0
Japan	-3.1	1.0	-16.7	1.6	-1.9	-3.8	-5.4	1.7	-4.3	1.2
Other developed	-3.7	3.3	-4.0	0.9	-7.1	1.4	-1.8	2.8	-3.5	2.7

Table 7 Blocs and their population in 2008

	Population (millions)	Population (% of total)
LDCs	803	11.9
African LDC energy exporters	94	1.4
Bangladesh	160	2.4
Other Asia-Pacific LDCs	127	1.9
Other African LDCs	421	6.2
Other low income	3,375	50.0
China	1,315	19.5
South Asia	1,378	20.4
East Asia low income	352	5.2
Other Africa	329	4.9
Middle income	1,453	21.5
CIS and other	284	4.2
West Asia and North Africa	414	6.1
Latin America	571	8.5
East Asia middle income	184	2.7
High income	1,116	16.5
USA	316	4.7
Europe	524	7.8
Japan	127	1.9
Other developed	148	2.2
World total	6,746	100.0

Table 8 LDC groups: population and national income per capita, 2008

LDC bloc	Countries	Population (million)	National income per capita ($ ppp)[3]
African energy exporters	Angola, Equatorial Guinea, Sudan, Chad	94	2,313
Bangladesh	(one country)	160	1,276
Other Asian LDCs	Afghanistan, Nepal, Bhutan, Myanmar, Laos, Cambodia, Pacific islands	127	1,155
Other African LDCs	31 countries, other islands + Haiti & Yemen	412	790

[3] Purchasing power values of the year 2000. This applies to all money values reported in this article.

Table 9 Baseline projection for world economy, 2010 - 20

	Value in year				Average growth rate (% p.a.)		
	2000	2010	2015	2020	2000-10	2010-15	2015-20
Population (millions)	6,112	6,905	7,294	7,668	1.2	1.1	1.0
Income per capita ($ ppp)	6,941	8,490	10,286	12,809	2.0	3.9	4.5
Exports per capita ($)	1,308	1,796	2,114	2,395	3.2	3.3	2.5
Primary commodities	106	161	176	207	4.2	1.8	3.3
Energy products	98	248	315	359	9.7	4.9	2.7
Manufactures	851	1,017	1,214	1,380	1.8	3.6	2.6
Services	252	369	408	449	3.9	2.0	1.9
Relative prices (2000 = 100)							
Primary commodities	100	126	139	155	2.3	2.1	2.1
Oil	100	209	256	281	7.7	4.1	1.9
Exports of manufactures	100	99	107	112	-0.1	1.4	1.0
Government debt (% of GDP)	52	68	64	48	2.7	-1.3	-5.5
Energy production (btoe)	15	19	20	23	2.1	1.8	2.0
Energy use (kg per $ ppp GDP)	0.36	0.32	0.28	0.23	-1.1	-3.0	-3.3

Table 10 Baseline projection for LDCs: population, income and exports per capita, 2010 - 20

	Value in year				Average growth rate (% p.a.)		
	2000	2010	2015	2020	2000-10	2010-15	2015-20
African energy exporters							
Population (millions)	76	99	110	121	2.6	2.3	1.9
Income per capita ($ ppp)	1,309	2,169	2,630	3,363	5.2	3.9	5.0
Exports per capita ($)	206	476	651	906	8.7	6.5	6.8
Primary commodities	14	10	14	21	-3.1	6.2	9.0
Energy products	168	428	583	806	9.8	6.4	6.7
Manufactures	17	10	11	10	-5.2	1.7	-0.5
Services	8	28	43	68	13.0	9.2	9.6
Bangladesh							
Population (millions)	141	164	175	184	1.6	1.2	1.0
Income per capita ($ ppp)	886	1,361	1,791	2,333	4.4	5.6	5.4
Exports per capita ($)	45	66	82	100	3.9	4.5	4.0
Primary commodities	4	8	10	13	8.1	4.0	6.3
Energy products	0	0	1	1	...	...	2.8
Manufactures	36	49	59	67	3.1	3.6	2.6
Services	5	8	13	19	5.1	9.3	8.1
Other Asian LDCs							
Population (millions)	111	132	145	159	1.8	1.9	1.9
Income per capita ($ ppp)	683	1,228	1,402	1,687	6.0	2.7	3.8
Exports per capita ($)	69	92	96	103	3.0	0.8	1.5
Primary commodities	17	25	22	21	3.8	-2.2	-0.7
Energy products	3	10	9	9	10.9	-1.8	0.9
Manufactures	28	34	40	47	2.0	3.2	3.2
Services	20	24	25	26	1.8	1.0	0.6
Other African LDCs							
Population (millions)	337	445	507	571	2.8	2.6	2.4
Income per capita ($ ppp)	625	820	817	850	2.8	-0.1	0.8
Exports per capita ($)	37	60	58	59	5.0	-0.5	0.2
Primary commodities	17	23	21	21	3.3	-1.2	-0.8
Energy products	1	3	5	6	10.5	9.9	1.9
Manufactures	8	16	15	17	7.1	-0.7	2.6
Services	11	18	17	15	5.1	-1.8	-1.4

Table 11 Baseline projection for LDCs: government debt and net external assets, 2010 - 20

	Value in year				Average growth rate (% p.a.)		
	2000	2010	2015	2020	2000-10	2010-15	2015-20
African energy exporters							
Government debt (% of GDP)	36	51	55	40	3.6	1.4	-3.5
Net external assets (% of GDP)	-20	21	43	54	...	...	...
Bangladesh							
Government debt (% of GDP)	36	35	22	15	-0.3	-8.6	-8.1
Net external assets (% of GDP)	-31	-18	-1	9	...	...	...
Other Asian LDCs							
Government debt (% of GDP)	43	39	30	21	-0.9	-4.9	-7.0
Net external assets (% of GDP)	-32	-37	-67	-88	...	...	...
Other African LDCs							
Government debt (% of GDP)	70	71	72	76	0.2	0.3	1.1
Net external assets (% of GDP)	-44	-39	-101	-151	...	...	...

Table 12 Stress tests for the world economy, 2015 and 2020

	Delayed recovery			Further crisis		
	Value	Difference from baseline (%)		Value	Difference from baseline (%)	
	2020	2015	2020	2020	2015	2020
Income per capita ($ ppp)	12,314	-12	-4	11,745	-1	-8
Exports per capita ($)	2,321	-13	-3	2,182	-2	-9
Primary commodities	213	-18	3	181	-2	-12
Energy products	346	-12	-4	330	-3	-8
Manufactures	1,324	-15	-4	1,244	-1	-10
Services	437	-7	-3	427	-1	-5
Relative prices (2000 = 100)						
Primary commodities	164	-19	6	135	-3	-13
Oil	272	-11	-3	261	-3	-7
Exports of manufactures	113	1	1	114	0	1
Government debt (% of GDP)	46	26	-4	63	2	31
Energy production (btoe)	23	-2	0	22	0	-1
Energy use (kg per $ of ppp GDP)	0.24	11	4	0.25	1	8

Table 13 Stress tests: impact on LDCs: 2015 and 2020

	Delayed recovery			Further crisis		
	Value	Difference from baseline (%)		Value	Difference from baseline (%)	
	2020	2015	2020	2020	2015	2020
African energy exporter LDCs						
Income per capita ($ 2000 ppp)	3,257	-9	-3	3,256	-1	-3
Exports per capita ($ 2000)	874	-12	-3	839	-3	-7
Primary commodities	22	-20	1	19	-2	-12
Energy products	777	-11	-4	747	-3	-7
Manufactures	11	-13	2	9	-2	-10
Services	65	-13	-4	64	-2	-6
Government debt (% of GDP)	41	27	2	45	2	11
Bangladesh						
Income per capita ($ 2000 ppp)	2,292	-5	-2	2,274	0	-3
Exports per capita ($ 2000)	99	-19	-1	88	-2	-11
Primary commodities	13	-17	2	12	-2	-12
Energy products	1	-12	-3	1	-3	-8
Manufactures	66	-21	-1	58	-2	-13
Services	18	-10	-4	18	-1	-5
Government debt (% of GDP)	15	26	2	17	1	18
Other Asian LDCs						
Income per capita ($ 2000 ppp)	1,640	-1	-3	1,674	0	-1
Exports per capita ($ 2000)	103	-11	0	94	-2	-9
Primary commodities	22	-18	3	19	-2	-12
Energy products	9	-13	-4	9	-3	-9
Manufactures	47	-12	0	42	-1	-11
Services	25	-3	-2	25	0	-2
Government debt (% of GDP)	21	12	0	23	0	9
Other African LDCs						
Income per capita ($ 2000 ppp)	781	-2	-8	845	0	-1
Exports per capita ($ 2000)	58	-14	-1	54	-2	-9
Primary commodities	21	-19	2	18	-2	-13
Energy products	5	-12	-3	5	-3	-8
Manufactures	17	-19	-2	16	-1	-9
Services	15	-3	-3	15	0	-2
Government debt (% of GDP)	79	23	3	89	0	16

Table 14 Accelerated growth targets for LDCs: 2015 and 2020

	level				growth rate (% p.a.)		
	estimated		assumed		estimated	assumed	
	2000	2010	2015	2020	2000-10	2010-15	2015-20
African energy exporter LDCs							
Population (millions)	76	99	110	121	2.6	2.2	1.9
Income per capita ($ ppp)	1,309	2,169	3,067	4,758	5.2	7.2	9.2
National income ($b ppp)	100	214	337	576	7.9	9.5	11.3
Bangladesh							
Population (millions)	141	164	175	184	1.6	1.3	1.0
Income per capita ($ppp)	886	1,361	1,855	2,776	4.4	6.4	8.4
National income ($b ppp)	125	224	325	511	6.0	7.7	9.5
Other Asian LDCs							
Population (millions)	111	132	145	159	1.8	1.9	1.9
Income per capita ($ppp)	683	1,228	1,809	2,920	6.0	8.0	10.0
National income ($b ppp)	76	162	262	464	7.9	10.1	12.1
Other African LDCs							
Population (millions)	337	445	495	558	2.8	2.1	2.4
Income per capita ($ppp)	625	820	1,035	1,434	2.8	4.8	6.8
National income ($b ppp)	211	365	512	800	5.7	7.0	9.3

Table 15 Accelerated government spending in LDCs

LDC policies	Government spending % growth rate			National income per capita % growth rate			$ ppp
	2000-10	2010-15	2015-20	2000-10	2010-15	2015-20	2020
African energy exporters							
Baseline	8.1	3.5	3.8	5.2	3.9	5.0	3,363
Targets		11.4	11.4		7.2	9.2	4,758
Target - baseline (%)		*7.9*	*7.6*		*3.2*	*4.1*	*41.5*
Outcome		same as target			7.3	8.9	4,710
Outcome - target (%)					*0.1*	*-0.3*	*-1.0*
Bangladesh							
Baseline	7.2	5.7	6.6	4.4	5.6	5.4	2,333
Targets		9.5	9.5		6.4	8.4	2,776
Target - baseline (%)		*3.8*	*2.9*		*0.7*	*3.0*	*19.0*
Outcome		same as target			6.6	6.7	2,591
Outcome - target (%)					*0.2*	*-1.7*	*-6.7*
Other Asian LDCs							
Baseline	6.6	4.4	4.8	6.0	2.7	3.8	1,687
Targets		12.1	12.1		8.0	10.0	2,920
Target - baseline (%)		*7.7*	*7.3*		*5.4*	*6.3*	*73.0*
Outcome		same as target			5.0	7.3	2,235
Outcome - target (%)					*-3.0*	*-2.7*	*-23.4*
Other African LDCs							
Baseline	6.3	2.4	2.2	2.8	-0.1	0.8	850
Targets		9.5	9.3		4.8	6.8	1,434
Target - baseline (%)		*7.1*	*7.1*		*4.8*	*6.0*	*68.8*
Outcome		9.5	9.3		3.4	5.7	1,278
Outcome - target (%)		*0.0*	*-0.2*		*-1.3*	*-1.1*	*-10.9*

Table 16 Accelerated government spending: impact on government deficits and debt

LDC policies	Government deficit % of GDP			Government debt % of GDP		
	2010	2015	2020	2010	2015	2020
	African energy exporters					
Baseline	11.0	7.7	4.5	54	57	40
Accelerated spending		11.0	13.0		62	62
Difference		3.3	8.4		5	22
	Bangladesh					
Baseline	1.4	0.0	0.1	35	22	14
Accelerated spending		1.4	1.7		23	19
Difference		1.4	1.6		1	5
	Other Asian LDCs					
Baseline	1.7	1.4	1.0	41	31	21
Accelerated spending		1.7	5.1		33	32
Difference		0.3	4.2		2	11
	Other African LDCs					
Baseline	6.4	5.7	4.7	72	71	73
Accelerated spending		6.4	9.3		67	76
Difference		0.7	4.6		-4	2

Table 17 Accelerated government spending: impact on current accounts and external positions

LDC policies	Current account % of GDP			Net external assets % of GDP		
	2010	2015	2020	2010	2015	2020
	African energy exporters					
Baseline	4.3	9.3	8.0	22	45	53
Accelerated spending		4.3	6.4		35	33
Difference		-5.0	-1.7		-10	-21
	Bangladesh					
Baseline	4.1	2.5	2.3	-18	-1	9
Accelerated spending		4.1	2.1		-2	6
Difference		1.6	-0.2		-1	-3
	Other Asian LDCs					
Baseline	-7.6	-7.8	-6.1	-39	-69	-88
Accelerated spending		-7.6	-8.7		-67	-84
Difference		0.2	-2.6		3	4
	Other African LDCs					
Baseline	-13.8	-11.6	-8.2	-39	-99	-145
Accelerated spending		-13.8	-11.9		-90	-120
Difference		-2.2	-3.7		9	25

Table 18 Accelerated infrastructure investment

LDC policies	Government spending % growth rate 2000-10	2010-15	2015-20	Non-govt investment % growth rate 2000-10	2010-15	2015-20	National income per capita % growth rate 2000-10	2010-15	2015-20	$ ppp 2020
African energy exporters										
Baseline	8.1	3.5	3.8	10.1	5.9	10.0	5.2	3.9	5.0	3,363
Targets		10.4	10.4		12.4	12.4		7.2	9.2	4,758
Target - baseline (%)		*6.9*	*6.6*		*6.5*	*2.4*		*3.2*	*4.1*	*41.5*
Outcome		same as target			same as target			7.2	8.1	4,545
Outcome - target (%)								*0.1*	*-1.1*	*-4.5*
Bangladesh										
Baseline	7.2	5.7	6.6	5.1	9.2	6.6	4.4	5.6	5.4	2,333
Targets		8.5	8.5		10.5	10.5		6.4	8.4	2,776
Target - baseline (%)		*2.8*	*1.9*		*1.3*	*3.9*		*0.7*	*3.0*	*19.0*
Outcome		same as target			same as target			6.5	7.1	2,619
Outcome - target (%)								*0.1*	*-1.3*	*-5.7*
Other Asian LDCs										
Baseline	6.6	4.4	4.8	11.2	4.3	6.2	6.0	2.7	3.8	1,687
Targets		11.1	11.1		13.1	13.1		8.0	10.0	2,920
Target - baseline (%)		*6.7*	*6.3*		*8.8*	*6.9*		*5.4*	*6.3*	*73.0*
Outcome		same as target			same as target			6.1	8.2	2,449
Outcome - target (%)								*-1.9*	*-1.9*	*-16.1*
Other African LDCs										
Baseline	6.3	2.4	2.2	9.7	1.8	2.1	2.8	-0.1	0.8	850
Targets		8.5	8.5		10.5	10.5		4.8	6.8	1,434
Target - baseline (%)		*6.1*	*6.3*		*8.7*	*8.4*		*4.8*	*6.0*	*68.8*
Outcome		same as target			same as target			4.3	6.3	1,373
Outcome - target (%)								*-0.5*	*-0.4*	*-4.3*

Table 19 Accelerated infrastructure investment: impact on exports, government debt and external position

LDC policies	Exports per capita ($ ppp)			Government debt % of GDP			Net external assets % of GDP		
	2010	2015	2020	2010	2015	2020	2010	2015	2020
African energy exporters									
Baseline	476	651	906	54	57	40	22	45	53
Accelerated infrastructure investment		656	919		59	58		35	35
% difference		*0.9*	*1.4*		*2*	*18*		*-10*	*-19*
Bangladesh									
Baseline	66	82	100	35	22	14	-18	-1	9
Accelerated infrastructure investment		85	106		22	15		-1	7
% difference		*3.0*	*6.7*		*0*	*1*		*0*	*-2*
Other Asian LDCs									
Baseline	92	96	103	41	31	21	-39	-69	-88
Accelerated infrastructure investment		101	117		27	20		-66	-82
% difference		*5.7*	*12.7*		*-4*	*-1*		*3*	*5*
Other African LDCs									
Baseline	60	58	59	72	71	73	-39	-99	-145
Accelerated infrastructure investment		64	70		59	56		-85	-105
% difference		*9.6*	*18.5*		*-12*	*-17*		*14*	*40*

Table 20 Export diversification and expansion: growth targets and outcomes

LDC policies	Exports % growth rate 2000-10	Exports % growth rate 2010-15	Exports % growth rate 2015-20	National income per capita % growth rate 2000-10	National income per capita % growth rate 2010-15	National income per capita % growth rate 2015-20	National income per capita $ ppp 2020
African energy exporters							
Baseline	11.5	8.9	8.9	5.2	3.9	5.0	3,363
Targets		12.2	12.2		7.2	9.2	4,758
Target - baseline (%)		*3.3*	*3.3*		*3.2*	*4.1*	*41.5*
Outcome		11.0	12.2		6.0	6.7	4,015
Outcome - target (%)		*-1.2*	*0.0*		*-1.2*	*-2.4*	*-15.6*
Bangladesh							
Baseline	5.5	5.7	5.0	4.4	5.6	5.4	2,333
Targets		12.5	12.5		6.4	8.4	2,776
Target - baseline (%)		*6.8*	*7.5*		*0.7*	*3.0*	*19.0*
Outcome		8.0	11.8		6.4	6.9	2,597
Outcome - target (%)		*-4.5*	*-0.7*		*0.0*	*-1.4*	*-6.4*
Other Asian LDCs							
Baseline	4.9	2.6	3.5	6.0	2.7	3.8	1,687
Targets		15.1	15.1		8.0	10.0	2,920
Target - baseline (%)		*12.5*	*11.6*		*5.4*	*6.3*	*73.0*
Outcome		10.0	14.2		5.1	7.6	2,266
Outcome - target (%)		*-5.1*	*-0.9*		*-3.0*	*-2.5*	*-22.4*
Other African LDCs							
Baseline	8.0	2.1	2.6	2.8	-0.1	0.8	850
Targets		12.5	12.5		4.8	6.8	1,434
Target - baseline (%)		*10.4*	*9.9*		*4.8*	*6.0*	*68.8*
Outcome		7.8	11.7		2.4	5.5	1,210
Outcome - target (%)		*-4.7*	*-0.8*		*-2.3*	*-1.2*	*-15.6*

Table 21 Export diversification and expansion: improvements in exports by sector

($ per capita)

LDC policies	Primary commodities			Energy products			Manufactures			Services		
	2010	2015	2020	2010	2015	2020	2010	2015	2020	2010	2015	2020
African energy exporters												
Baseline	10	14	21	428	583	806	10	11	10	28	43	68
Export expansion policy		21	56		605	894		33	95		58	113
Difference		*7*	*35*		*22*	*88*		*23*	*85*		*15*	*45*
Bangladesh												
Baseline	8	10	13	0	1	1	49	59	67	8	13	19
Export expansion policy		10	17		1	4		67	107		14	24
Difference		*0*	*3*		*0*	*3*		*8*	*40*		*1*	*5*
Other Asian LDCs												
Baseline	25	22	21	10	9	9	34	40	47	24	25	26
Export expansion policy		38	88		10	11		58	93		31	48
Difference		*15*	*67*		*1*	*1*		*17*	*46*		*6*	*23*
Other African LDCs												
Baseline	23	21	21	3	5	6	16	15	17	18	17	15
Export expansion policy		24	31		5	5		28	59		19	23
Difference		*3*	*10*		*0*	*0*		*13*	*42*		*2*	*8*

Table 22 Export diversification and expansion: impact on investment, government debt and external position

LDC policies	Non-govt investment ($ ppp per capita)			Government debt % of GDP			Net external assets % of GDP		
	2010	2015	2020	2010	2015	2020	2010	2015	2020
African energy exporters									
Baseline	304	361	530	54	57	40	22	45	53
Export expansion policy		449	735		46	24		44	54
% difference		*24*	*39*		*-12*	*-16*		*-1*	*1*
Bangladesh									
Baseline	217	317	416	35	22	14	-18	-1	9
Export expansion policy		335	485		19	9		1	18
% difference		*6*	*17*		*-2*	*-6*		*3*	*8*
Other Asian LDCs									
Baseline	195	220	270	41	31	21	-39	-69	-88
Export expansion policy		248	351		23	6		-49	-19
% difference		*13*	*30*		*-8*	*-15*		*20*	*68*
Other African LDCs									
Baseline	146	140	137	72	71	73	-39	-99	-145
Export expansion policy		164	213		55	28		-76	-48
% difference		*17*	*55*		*-16*	*-45*		*23*	*97*

Table 23 Building productive capacities

LDC policies	Exports			National income per capita			
	% growth rate			% growth rate			$ ppp
	2000-10	2010-15	2015-20	2000-10	2010-15	2015-20	2020
African energy exporters							
Baseline	11.5	8.9	8.9	5.2	3.9	5.0	3'363
Targets		12.3	12.3		7.2	9.2	4'758
Target - baseline (%)		*3.4*	*3.4*		*3.2*	*4.1*	*41.5*
Outcome		11.2	12.3		8.3	8.6	4'866
Outcome - target (%)		*-1.1*	*0.0*		*1.1*	*-0.6*	*2.3*
Bangladesh							
Baseline	5.5	5.7	5.0	4.4	5.6	5.4	2'333
Targets		12.5	12.5		6.4	8.4	2'776
Target - baseline (%)		*6.8*	*7.5*		*0.7*	*3.0*	*19.0*
Outcome		8.0	11.8		6.8	7.7	2'738
Outcome - target (%)		*-4.5*	*-0.7*		*0.4*	*-0.7*	*-1.4*
Other Asian LDCs							
Baseline	4.9	2.6	3.5	6.0	2.7	3.8	1'687
Targets		15.1	15.1		8.0	10.0	2'920
Target - baseline (%)		*12.5*	*11.6*		*5.4*	*6.3*	*73.0*
Outcome		10.0	14.2		7.5	10.0	2'837
Outcome - target (%)		*-5.1*	*-0.9*		*-0.5*	*-0.1*	*-2.8*
Other African LDCs							
Baseline	8.0	2.1	2.6	2.8	-0.1	0.8	850
Targets		12.5	12.5		4.8	6.8	1'434
Target - baseline (%)		*10.4*	*9.9*		*4.8*	*6.0*	*68.8*
Outcome		7.7	11.5		5.2	7.8	1'531
Outcome - target (%)		*-4.8*	*-1.0*		*0.4*	*1.0*	*6.8*

Table 24. Building productive capacities: impact on non-govt investment, government debt and net external assets

LDC policies	Non-govt investment ($ ppp per capita)			Government debt % of GDP			Net external assets % of GDP		
	2010	2015	2020	2010	2015	2020	2010	2015	2020
African energy exporters									
Baseline	304	361	530	54	57	40	22	45	53
Accelerated infrastructure and export-led growth		485	789		51	45		38	44
% difference		*34*	*49*		*-6*	*5*		*-7*	*-9*
Bangladesh									
Baseline	217	317	416	35	22	14	-18	-1	9
Accelerated infrastructure and export-led growth		336	527		21	12		1	16
% difference		*6*	*27*		*-1*	*-2*		*2*	*7*
Other Asian LDCs									
Baseline	195	220	270	41	31	21	-39	-69	-88
Accelerated infrastructure and export-led growth		330	555		23	11		-51	-29
% difference		*50*	*106*		*-8*	*-10*		*18*	*58*
Other African LDCs									
Baseline	146	140	137	72	71	73	-39	-99	-145
Accelerated infrastructure and export-led growth		209	303		53	38		-73	-52
% difference		*50*	*121*		*-17*	*-36*		*26*	*93*

APPENDIX: STRESS TESTS

Table A1 Stress tests for accelerated government spending in LDCs

Global context	National income per capita $ ppp			Government debt % of GDP			Net external assets % of GDP		
	2010	2015	2020	2010	2015	2020	2010	2015	2020
African energy exporters									
Baseline	2,169	3,081	4,710	54	62	62	22	35	33
Delayed recovery		2,864	4,646		74	61	22	27	27
% difference from baseline		-7	-1		12	-1		-8	-6
Further crisis		3,043	4,614		62	67	22	34	29
% difference from baseline		-1	-2		0	4		-1	-3
Bangladesh									
Baseline	1,361	1,873	2,591	35	23	19	-18	-2	6
Delayed recovery		1,800	2,573		29	20	-18	-6	3
% difference from baseline		-4	-1		6	0		-4	-3
Further crisis		1,867	2,540		23	22	-18	-2	5
% difference from baseline		0	-2		0	3		0	-1
Other Asian LDCs									
Baseline	1,228	1,569	2,235	41	33	32	-39	-67	-84
Delayed recovery		1,555	2,196		36	31	-39	-73	-82
% difference from baseline		-1	-2		3	-1		-6	2
Further crisis		1,567	2,227		33	34	-39	-67	-91
% difference from baseline		0	0		0	2		0	-7
Other African LDCs									
Baseline	820	970	1,278	72	67	76	-39	-90	-120
Delayed recovery		953	1,210		80	73	-39	-100	-125
% difference from baseline		-2	-5		13	-3		-11	-5
Further crisis		970	1,273		67	85	-39	-90	-131
% difference from baseline		0	0		0	9		0	-11

Table A2 Stress tests for accelerated infrastructure investment in LDCs

Global context	Exports per capita $ ppp			National income per capita $ ppp			Net external assets % of GDP		
	2010	2015	2020	2010	2015	2020	2010	2015	2020
African energy exporters									
Baseline	476	656	919	2,169	3,076	4,545	22	35	35
Delayed recovery		582	889		2,914	4,503		26	28
% difference		-11	-3		-5	-1		-9	-7
Further crisis		636	851		3,040	4,459		34	31
% difference		-3	-7		-1	-2		-1	-3
Bangladesh									
Baseline	66	85	106	1,361	1,861	2,619	-18	-1	7
Delayed recovery		71	106		1,833	2,612		-6	4
% difference		-17	0		-2	0		-4	-3
Further crisis		83	96		1,858	2,600		-1	6
% difference		-1	-10		0	-1		0	-1
Other Asian LDCs									
Baseline	92	101	117	1,228	1,652	2,449	-39	-66	-82
Delayed recovery		91	116		1,647	2,415		-73	-81
% difference		-10	0		0	-1		-7	2
Further crisis		100	107		1,651	2,447		-66	-89
% difference		-1	-8		0	0		0	-7
Other African LDCs									
Baseline	60	64	70	820	1,011	1,373	-39	-85	-105
Delayed recovery		56	70		1,002	1,337		-95	-108
% difference		-13	1		-1	-3		-10	-3
Further crisis		63	64		1,010	1,372		-85	-115
% difference		-1	-8		0	0		0	-10

Table A3 Stress tests for export diversification and expansion policies in LDCs

Global context	Exports per capita $ ppp			National income per capita $ ppp			Net external assets % of GDP		
	2010	2015	2020	2010	2015	2020	2010	2015	2020
African energy exporters									
Baseline	476	717	1,159	2,169	2,899	4,015	22	44	54
Delayed recovery		581	955		2,527	3,543		36	44
% difference		*-19*	*-18*		*-13*	*-12*		*-8*	*-10*
Further crisis		694	922		2,855	3,577		44	53
% difference		*-3*	*-20*		*-2*	*-11*		*-1*	*-2*
Bangladesh									
Baseline	66	92	152	1,361	1,856	2,597	-18	1	18
Delayed recovery		92	152		1,852	2,561		3	16
% difference		*0*	*0*		*0*	*-1*		*2*	*-2*
Further crisis		92	152		1,858	2,596		1	19
% difference		*0*	*0*		*0*	*0*		*0*	*1*
Other Asian LDCs									
Baseline	92	136	240	1,228	1,574	2,266	-39	-49	-19
Delayed recovery		106	180		1,484	2,035		-63	-41
% difference		*-22*	*-25*		*-6*	*-10*		*-13*	*-21*
Further crisis		136	212		1,577	2,192		-49	-26
% difference		*0*	*-11*		*0*	*-3*		*0*	*-7*
Other African LDCs									
Baseline	60	76	118	820	925	1,210	-39	-76	-48
Delayed recovery		59	88		858	1,018		-96	-85
% difference		*-23*	*-26*		*-7*	*-16*		*-21*	*-38*
Further crisis		76	103		929	1,160		-75	-60
% difference		*0*	*-13*		*0*	*-4*		*0*	*-13*

Table A4 Stress tests for building productive capacities in LDCs

Global context	Exports per capita $ ppp			National income per capita $ ppp			Net external assets % of GDP		
	2010	2015	2020	2010	2015	2020	2010	2015	2020
African energy exporters									
Baseline	476	722	1'175	2'169	3'225	4'866	22	38	44
Delayed recovery		587	969		2'977	4'636		26	31
% difference		*-19*	*-17*		*-8*	*-5*		*-12*	*-14*
Further crisis		699	933		3'185	4'596		38	38
% difference		*-3*	*-21*		*-1*	*-6*		*-1*	*-6*
Bangladesh									
Baseline	66	92	152	1'361	1'892	2'738	-18	1	16
Delayed recovery		92	152		1'897	2'726		2	14
% difference		*0*	*0*		*0*	*0*		*2*	*-2*
Further crisis		92	152		1'894	2'743		1	17
% difference		*0*	*0*		*0*	*0*		*0*	*1*
Other Asian LDCs									
Baseline	92	136	240	1'228	1'765	2'837	-39	-51	-29
Delayed recovery		107	183		1'707	2'670		-63	-49
% difference		*-21*	*-24*		*-3*	*-6*		*-12*	*-19*
Further crisis		136	214		1'768	2'791		-50	-36
% difference		*0*	*-11*		*0*	*-2*		*0*	*-7*
Other African LDCs									
Baseline	60	76	117	820	1'054	1'531	-39	-73	-52
Delayed recovery		60	88		1'016	1'412		-90	-84
% difference		*-22*	*-24*		*-4*	*-8*		*-16*	*-32*
Further crisis		76	103		1'058	1'504		-73	-63
% difference		*0*	*-12*		*0*	*-2*		*0*	*-11*

Boxes

Box 1 The Global Policy Model (GPM)

The GPM has been developed for UN DESA as a tool for investigation of alternative policy scenarios for the world economy tracing the impacts of trends, shocks and policy responses over short, medium and long-term timescales. The model is based on historical data covering the entire world assembled in a databank that distinguishes 129 countries and country groups and provides consistent annual time series of national accounts, balance of payments and external positions, trade by broad commodity group, interest rates and exchange rates, inflation, government debt, exchange reserves and other bank assets and liabilities, and energy production and use from 1970 to 2008.[4] For modelling purposes individual countries are aggregated into blocs (country groups) defined by world region, income level and other economic or institutional characteristics. Any number of scenarios may then be defined and simulated as a basis for examining how changes in institutions, policy rules, expectations and confidence factors are likely to impact the bloc where they occur and spill over to other blocs and the world economy as a whole.

The GPM relies on an accounting framework in which variables are presented in 'real' terms to maintain comparability through time and across countries. International transactions are measured in 'real' dollars while domestic variables are measured on a 'real' purchasing-power basis.[5] Behaviour is determined by reaction functions representing common or normal adjustment processes that are broadly consistent with recorded annual movements of macro-economic variables in recent decades.

The model is regular in the sense that it uses the same equation structure for each bloc. Values of reaction coefficients or elasticities are in most cases based on panel estimation as the equations are intended to 'explain' differences between blocs as well as movements through time. Differences between blocs are attributed to their initial conditions and to long-term factors including geographical position (represented by fixed effects). More immediate effects of differences or changes in institutions and policies are captured as time-varying residuals. The potential flexibility of behaviour in each bloc including the influence of changes in policy is estimated by examination of historical volatility of these residual terms.

Variables and model closure

The main groups of variables defined for each bloc are as follows:

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[4] The databank and model were originally developed at the Cambridge Department of Applied Economics in the 1980s and have subsequently been maintained by Alphametrics Ltd. and the Cambridge Endowment for Research in Finance (CERF). The present version comprises expansions and revisions made for the UN Department of Economic and Social Affairs, Development Policy and Analysis Division (UN/DESA/DPAD) under the direction of Rob Vos.

[5] For a discussion of comparisons through time and across countries see World Bank, "Global Purchasing Power Parities and Real Expenditures - 2005 International Comparison Program", 2008 and P.Schreyer and F.Koechlin, "Purchasing power parities - measurement and uses", OECD Statistics Brief, March 2002, No. 3. In the GPM series for individual countries are aggregated to bloc level using current and constant price dollar values converted at current or base-year market rates respectively. A base-year purchasing power adjustment is then applied to data for each bloc as a whole. Thus percentage changes of stocks and flows through time are the same are the same whether measured at base-year market rates or base-year purchasing power parities.

- National income and population
- Government accounts
- Private income, expenditure, capital and wealth
- Monetary policy and assets and liabilities of the banking system
- Exchange rates, reserves and external assets and liabilities
- Inflation and capacity utilisation
- Balance of payments current account
- Trade in goods and services by commodity group
- Production and use of primary energy.

International transactions are reconciled in value and volume terms to make sure they balance for the world as a whole. In general transactions are modelled independently for each bloc before being reconciled by a scaling adjustment to make total receipts equal to total payments for the world as a whole. A scaling procedure is also used to ensure consistency of real exchange rates and international asset valuations. Exceptionally, global supply and demand for primary energy are balanced by adjusting the world price of oil. World prices of primary commodities are modelled as a response to changing demand with supply balanced by price and quantity adjustments.

Measurement units

The GPM uses 'real value' or purchasing-power measures for income and expenditure flows and assets and liabilities; domestic transactions and assets are adjusted for differences in price levels between blocs ($ ppp), for example national income and domestic spending while external transactions and assets, for example trade flows and international positions, preserve money equivalence across blocs ($). Both measures are deflated to represent equivalent values of the year 2000 (domestic series use a domestic expenditure deflator, international transactions use a world expenditure deflator).

The 'real exchange rate' for each bloc is defined as the ratio of the domestic expenditure deflator to the world deflator. The real exchange rate is more than 1 for some high-income countries, notably Japan, approximately 1 for the US, 0.5 for many middle-income countries and 0.2 - 0.4 for most low-income countries. The real exchange rate provides a general indicator of the relative level of costs and prices in different blocs and may be used to convert international values to domestic values and vice versa.

NB Money values ($ and $ppp) in all tables represent values of the year 2000.

Box 2 Grouping of countries into blocs

Bloc	*Countries*
	LDCs
Bangladesh	(one country)
Other Asia-Pacific LDCs	Afghanistan, Nepal, Bhutan, Myanmar, Laos, Cambodia, Kiribati, Maldives, Samoa, Solomon Islands, Timor-Leste, Tuvalu, Vanuatu
African energy exporters	Angola, Equatorial Guinea, Chad, Sudan
Other African LDCs	Benin, Burkina Faso, Burundi, Central African Republic, Democratic Republic of the Congo, Djibouti, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Rwanda, Senegal, Sierra Leone, Somalia, Togo, Uganda, Tanzania, Zambia, Sao Tome and Principal, (plus Haiti and Yemen)
	Other low income
China	(mainland and Macau)
South Asia	India, Sri Lanka, Pakistan
East Asia low income	Democratic Peoples Republic of Korea, Mongolia, Papua New Guinea, Philippines, Indonesia
Other Africa	Congo, Cote d'Ivoire, Cameroon, Ghana, Guinea, Kenya, Nigeria, South Africa, Zimbabwe, other African territories
	Middle income
CIS and other	Former Soviet Union
West Asia and North Africa	UAE, Bahrain, Algeria, Egypt, Iraq, Iran, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Saudi Arabia, Syria, Tunisia, Turkey, other Middle East (excl Yemen)
Latin America	South Ameria, Central America, Mexico and Carribean (excl Haiti)
East Asia middle income	Malaysia, Thailand, Vietnam, Other Oceania
	High income
USA	(one country)
Europe	EU and non-EU member countries
Japan	(one country)
Other developed	Australia, Canada, Hong Kong, Israel, Republic of Korea, New Zealand, Singapore, Taiwan

Box 3 Policies for accelerated income growth

Type of policy	*Target and, instruments*
1. Accelerated growth of government spending	Government spending on goods and services will be increased steadily over a medium or long-term horizon. The target growth rate of government spending will be the same as the long-term target growth rate for GDP. Consumer and investment spending, production capacity, trade flows and the real exchange rate are expected to exhibit stable responses that maintain GDP growth at or near the target rate in the long term. Risks include trade deficits, excessive external debt or government debt and inability to maintain a non-inflationary exchange rate.
2. Accelerated infrastructure investment	Government spending on goods and services will be increased steadily with emphasis on social and physical infrastructure while investment spending by state enterprises, corporations and households is encouraged to grow slightly faster than the long-term target growth rate for GDP. Improved services and infrastructure contribute to a stronger export performance. Consumer spending, production capacity, imports and the real exchange rate are expected to respond in a manner that maintains GDP growth at or near the target rate in the long term. Risks may be somewhat reduced by less reliance on government spending and emphasis on infrastructure improvement that will encourage exports and inward capital flows.
3. Export diversification and expansion	Industrial and trade policies are focussed on achieving accelerated growth of exports in all sectors with a target for growth of total exports that is 3% per year higher than the target growth rate of GDP. It is assumed that domestic spending, production, imports and the real exchange rate will respond in a manner that maintains GDP growth at the target rate while maintaining a viable external position. Risks include failure to induce sufficient growth of domestic spending and GDP that could ultimately result in a rising real exchange rate that jeopardizes the success of the industrial and trade policies.
4. Building productive capacities	The combination of policies 2 and 3.