The effects of Dutch aid on development and the Netherlands

A modelling approach

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Executive summary

Having spent more than 0.7% of GNI on aid over the period 1975–2012, the Netherlands is currently on a path towards declining to 0.55% of GNI by 2017. This paper argues that this decline in aid is not only bad news for development but is also self-defeating for the Dutch. The Netherlands is an open economy increasingly dependent on developing countries for exports and also cheap and reliable imports and aid can facilitate mutually beneficial trade with developing countries.

The quality and price of imports from developing countries are increasingly relevant for the Netherlands. The value of Dutch imports increased from well under €45 billion (US$50 billion) throughout the period 1995–2003 to €106.8 billion (US$137.3 billion) by 2012. Imports from seven of the top ten individual Dutch aid recipients (in total over the period 2001–12) grew faster than imports from the world as a whole over the same period.

The Netherlands depends on growth in its export markets and developing countries are increasingly important destinations for Dutch exports. Exports to developing countries increased from €11–15 billion (US$13–17 billion) over 1995–99 to € 64.2 billion (US$82.5 billion) in 2012, and developing countries' share in total exports rose from 8.7% in 1995 to 14.9% in 2012. Exports to all but one of the top ten individual Dutch aid recipients (in total over the period 2001–12) grew faster than exports to the world as a whole.

This report examines the effects of aid, especially the effects of Dutch aid, for the Dutch economy and recipient economies in the long term. We carry out simulations using the National Institute's Global Econometric Model, NiGEM, which is being used by a range of organisations and central banks, including the Dutch Central Bank. We report the economic effect on the Netherlands (gross domestic product (GDP), exports, investment) of investing 0.7%/GNI as aid between 2013 and 2017 (2013 being when the 0.7% target was given up, 2017 the end of this government's mandate) and compare this to (i) no aid and (ii) the current planned level of aid. The combined shock, calibrated on the basis of Dutch aid by country, region and sector, can boost GDP by about 1% in sub-Saharan Africa.

This in turn has an impact on the Dutch economy. Aid leads to lower trade costs, cheaper Dutch imports, increased exports and a range of other effects not considered in the model. The total effects lead to an increase of Dutch GDP of 0.03% each year over 2013–17, or an accumulated € 0.94 billion over the entire period. This means that Dutch aid has a rate of return of 4%. Exports would increase by €11.9 billion over the period. In other words, aid pays for itself.

However, if current plans for aid spending are maintained, the Netherlands would lose €250 million in GDP compared to a 0.7% scenario, and €330 million in terms of private investment.

1 Introduction

While the Netherlands has always been a development champion, and consistently met or exceeded the UN Official Development Assistance (ODA) target of 0.7% of gross national income (GNI) between 1975 and 2012, the Dutch majority parties VVD (centre right) and PvdA (Labour) adopted in 2012 a coalition agreement identifying €3.25 billion of cumulative cuts to ODA over the four years 2013–17, leading to a clear abandonment of the 0.7% of GNI target. Public discourse around development spending has changed radically in recent years. Some political parties went so far as to campaign on abolishing all aid except emergency humanitarian spending, and others for a two-thirds cut in aid for development. This marks a radical change which we argue is actually harmful not only for developing countries but also for the Netherlands, an open economy which increasingly depends on products and services produced or consumed in developing countries.

This report will examine the effects of aid, especially the effects of Dutch aid, for the Dutch economy and recipient economies in the long term. We carry out simulations using the National Institute's Global Econometric Model, NiGEM. The NiGEM model has been in use at the National Institute for forecasting and policy analysis since 1987, and is also used by a group of about 40 model subscribers, mainly in the policy community, including the Dutch Central Bank, the Bank of England, the ECB, the Bundesbank, the OECD and the IMF. We report the economic effect on the Netherlands (gross domestic product (GDP), exports, employment) of investing 0.7%/GNI as aid between 2013 and 2017 (2013 being when the 0.7% target was given up, 2017 the end of this government's mandate) and compare this to (i) no aid and (ii) the current planned level of aid. We also illustrate the effects on developing countries, mainly aggregated for broad regions.

The report is structured around the following sections. Section 2 discusses past and future issues related to the level and composition of Dutch aid. Section 3 discusses a number of broad pathways through which Dutch aid might affect the Dutch economy and those of its aid recipients. Section 4 simulates the effects of Dutch aid using the NIGEM model. Section 5 concludes.

2 Dutch aid: past, current and future considerations

This section provides background on Dutch aid. We first examine the level and the destination of Dutch aid (which countries and sectors) and future plans (Section 2.1). We then provide a brief overview of past evaluations of Dutch aid (Section 2.2).

2.1 The level and destination of Dutch aid in the past and future.

Until 2013 the Netherlands consistently surpassed the UN's 0.7% ODA/GNI target. Dutch ODA was higher than 0.7% of GNI between 1975 and 2012, when it reached 0.71% (see Figure 1). However, aid declined to below 0.7% of GNI for the first time in 2013 and it is scheduled to decrease steadily to 0.55% of GNI in 2017.

Figure 1: Dutch ODA (as % of GNI (1960-2012); plans as % of GNP (2013–17))
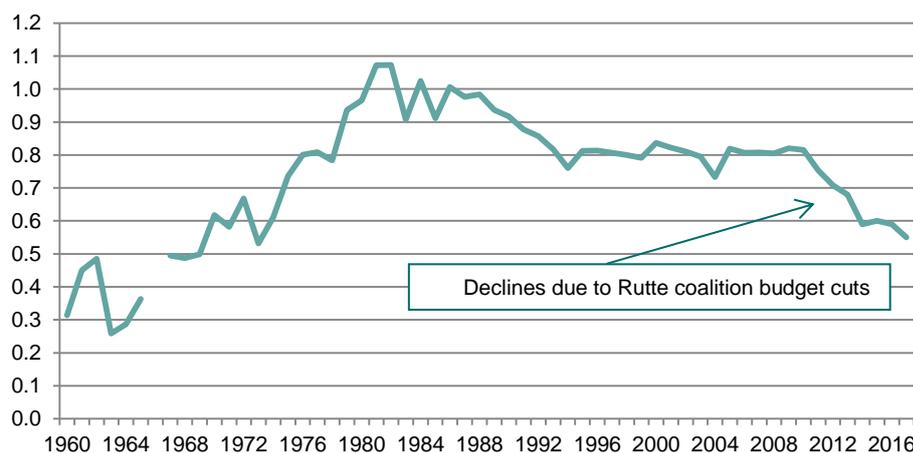
Sources:
1960–2012: Center for Global Development, Net Aid Transfers Dataset (http://www.cgdev.org/publication/net-aid-transfers-data-set-1960%E2%80%932012) (no data for Netherlands in 1966).
2013–17: Ministry of Foreign Affairs of the Netherlands (2013): Section 5.2.

The OECD DAC and CRS databases can be used to examine Dutch aid in more detail. Figure 2 shows Dutch aid disbursements between 2001 and 2012 in Euro. Disbursements may be made bilaterally or multilaterally. Bilateral aid is from country to country, so that it is the donor who decides to whom to give aid, and for what purpose; multilateral aid is unearmarked aid from countries to multilateral organisations. Around 70% of total Dutch aid is bilateral (Figure 3).

Figure 2: Dutch ODA, 2012 constant prices, Euro, 2001–12
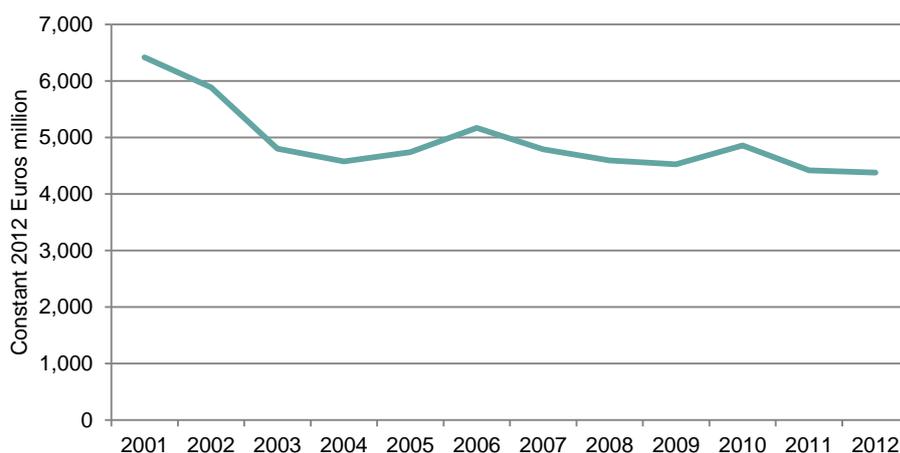
Source: OECD.StatExtracts, DAC Table 1 (http://stats.oecd.org/Index.aspx?datasetcode=TABLE1). Converted into Euros using OECD DAC exchange rates (http://stats.oecd.org/index.aspx?queryid=169#).

Figure 3: Distribution of Dutch ODA, 2012
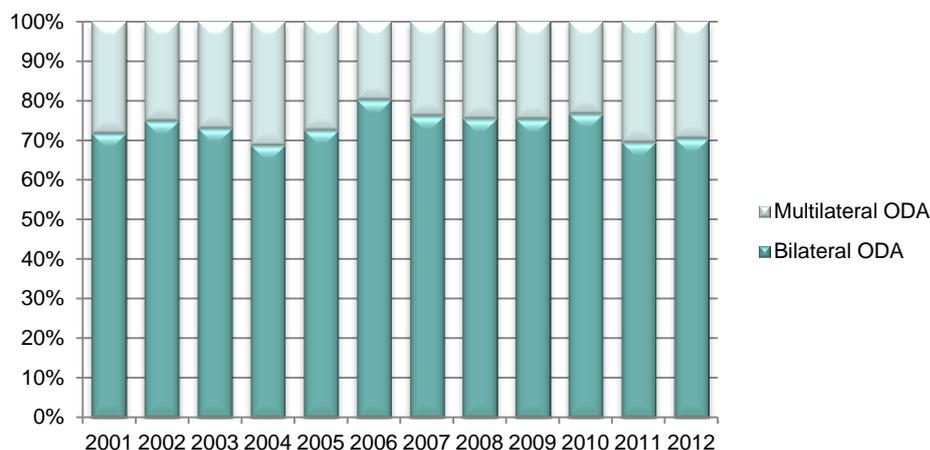
Source: OECD.StatExtracts, DAC Table 1 (http://stats.oecd.org/Index.aspx?datasetcode=TABLE1).

We can also analyse the geographical and sectoral distribution of bilateral aid. Figure 4 shows the regional allocation of Dutch bilateral aid. However, a large, and increasing, share of Dutch gross disbursements is to unspecified recipients – in 2001 this was 21.8% and by 2012 it amounted to 69%.[2] On the basis of disbursements to known recipients, sub-Saharan Africa (SSA) was overwhelmingly the largest beneficiary during the period 2001–12, being the largest recipient region in each individual year and receiving well over three times as much in total over the whole period as the second-largest beneficiary – South and Central Asia. In spite of this, the share of total aid going to SSA from the Netherlands remains lower than that of all but two other countries in the EU, a surprising fact given that two-thirds of Dutch partner countries are in SSA (ONE, 2013).

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[2] Resources reported to the DAC where the beneficiary is not a country or region are reported as 'bilateral unspecified'. Resources reported as 'bilateral, unspecified' usually include non-country programmable aid such as administrative costs, refugees in donor country and research costs.

Figure 4: Share of Dutch bilateral aid by region, 2001–12

Legend (top to bottom): Unspecified, Oceania, Asia, regional, Middle East, South & Central Asia, Far East Asia, America, regional, South America, North & Central America, Africa, regional, SSA, North Africa, Europe
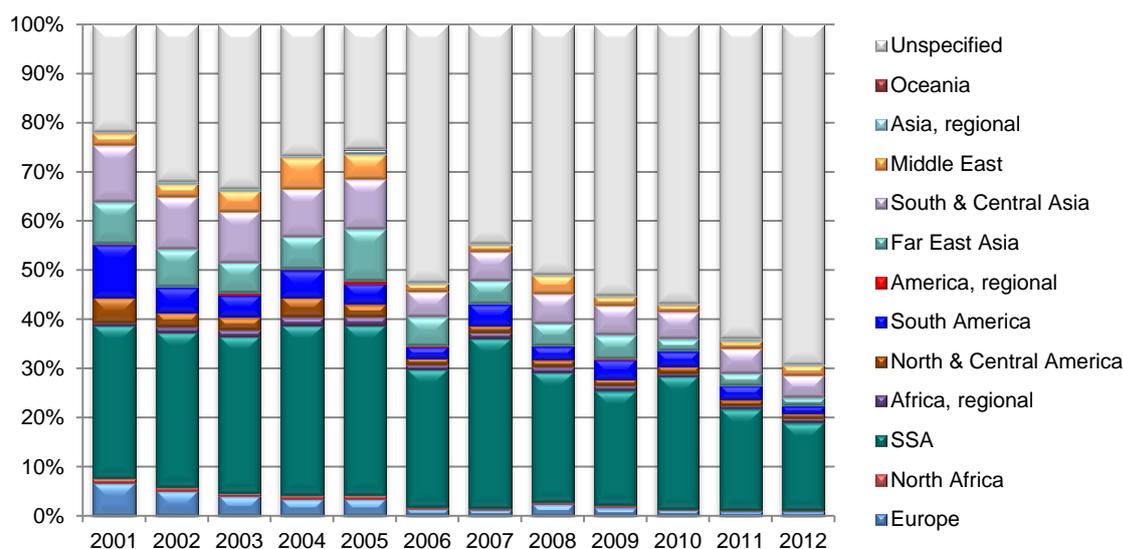
Source: Calculated from OECD CRS bulk data files (dated 8 April 2014).

Figure 5 shows the breakdown of gross disbursements by broad sector (for which the amounts unallocated or unspecified have declined to almost zero in recent years).[3] The major sector throughout the period has been social infrastructure and services, which by 2012 alone accounted for 47% of the total. Multi-sector/cross-cutting disbursements have also accounted for a high proportion of the total over the period, although in 2012 these ranked below administrative costs of donors, economic infrastructure and services, refugees in donor countries, and production sectors. The share of economic and social infrastructure in Dutch bilateral aid was 56.3%.

Figure 5: Share of Dutch bilateral aid by sector, 2001–12

Legend (top to bottom): Unallocated / Unspecified, Refugees in Donor Countries, Administrative Costs of Donors, Humanitarian Aid, Action Relating to Debt, Commodity Aid / General Prog. Ass., Multi-Sector / Cross-Cutting, Production Sectors, Economic Infrastructure & Services, Social Infrastructure & Services
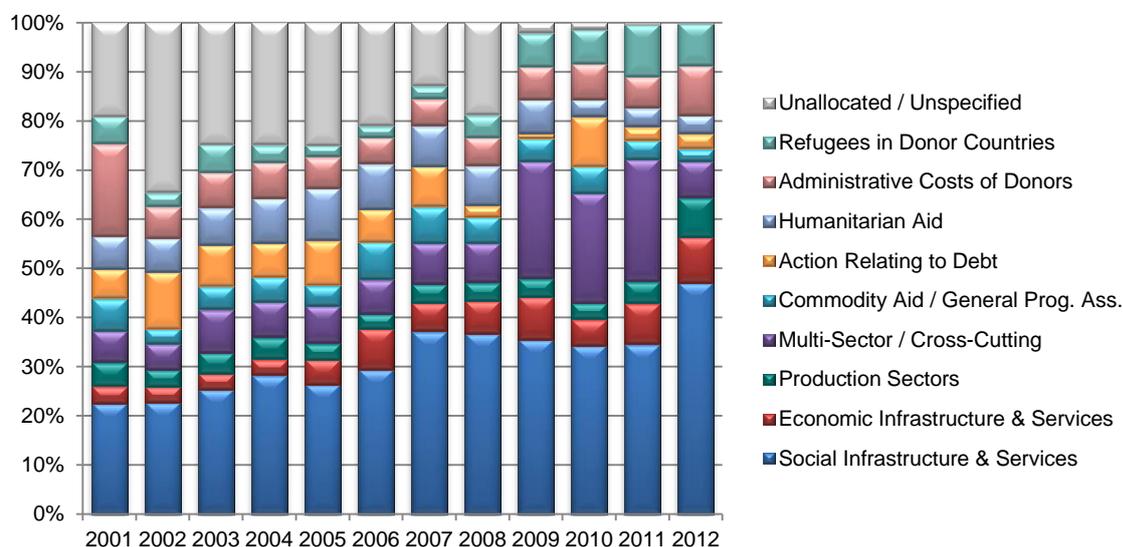
Source: Calculated from OECD CRS bulk data files (dated 8 April 2014).

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[3]   More narrowly defined purposes of Dutch aid falling within these broad sector headings include:
Social Infrastructure and Services – education, health, water supply and sanitation, government and civil society in general;
Economic Infrastructure and Services – transport and storage, communications, energy, banking and financial services, business and other services;
Production Sectors – agriculture, forestry, fishing, industry, mineral resources and mining, construction, trade policies and regulations, tourism;
Multi-Sector/Cross-cutting – general environment protection;
Commodity Aid/General Programme Assistance – general budget support, food aid/food security;
Humanitarian Aid – emergency response, reconstruction/relief/rehabilitation, disaster prevention and preparedness.

The data available on regional disbursements by sector are shown in Figure 6 (in which SSA is shown separately, as the amounts involved are much greater than those for any of the other regions).

Figure 6: Value of Dutch bilateral aid by region and sector, 2012
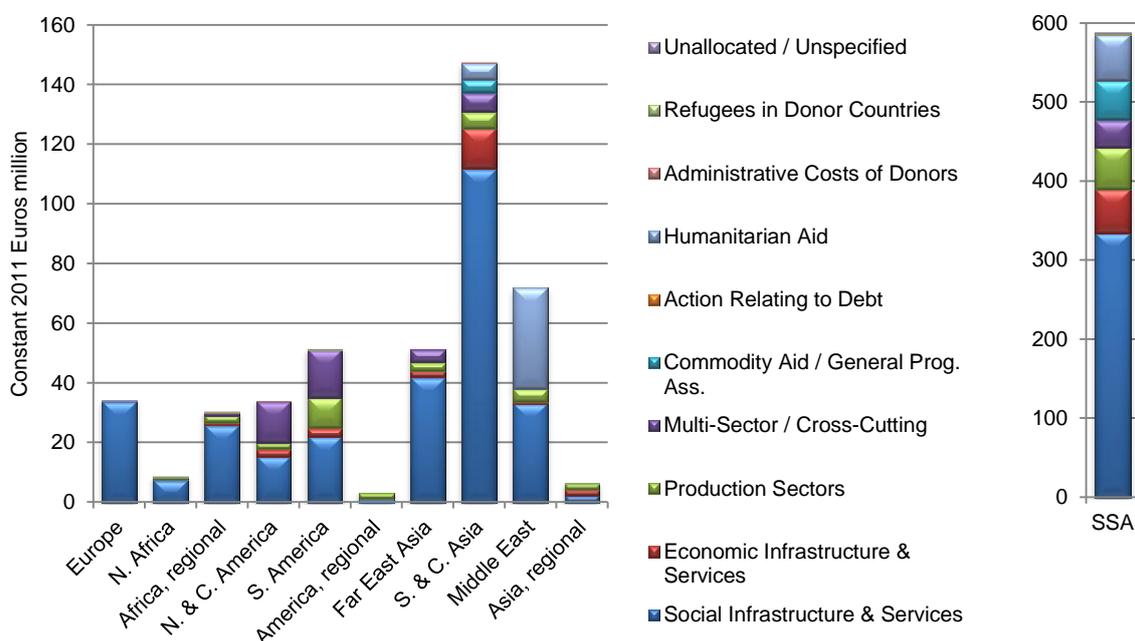
Source: Calculated from OECD CRS bulk data files (dated 8 April 2014). Converted into Euros using OECD DAC exchange rates (http://stats.oecd.org/index.aspx?queryid=169#).

2.2 Past evaluations of Dutch aid

Despite the importance attached to evaluations of Dutch aid, there have been no attempts to assess the impact of Dutch aid in its entirety. In a comprehensive assessment of Dutch aid, Spitz et al. (2013) argue that 'overall impact assessments of the complete Dutch aid efforts are not available'. However, the authors provide an overview which contains useful information about the effects of aid. These are broadly positive for the effects on recipients and the Netherlands.

As part of the DAC peer review, the OECD (2011) praised the Dutch aid efforts because of high-level political commitment, good staff awareness of the Paris principles and efforts by Dutch embassies to apply them. It mentions the main strengths of its development co-operation, in particular the flexible and responsive programmes managed by its embassies (p. 25) and the technical capacity in the Dutch embassies (p. 53).

The 2011 study also mentions that while retaining the emphasis on the Millennium Development Goals, the focus of Dutch aid is shifting away from social development towards economic sectors, supporting the self-reliance of developing countries and promoting the relationships among development objectives, global public goods such as climate policy or protecting biodiversity, and Dutch national interests.

IOB (2011) finds that budget support can be a good instrument for supporting policy in recipient countries. It also says that budget support has contributed to economic growth and helped to extend social services, especially in education and health. Financial management and democratic control also improved. But the instrument is not suitable for pursuing major reform if it is not backed by the recipient government.

An IOB (2008) study suggests that the best results of bilateral aid are found in improving access to public services (education and health care) and that the Netherlands had developed into a front-runner regarding the support of national policies for basic education.

Spitz et al (2013) further discuss the effects of Dutch aid for Dutch civil society, the effects of Dutch multilateral aid, and value for Dutch society. Regarding the effects for Dutch society, the study makes the following points.

- Development aid has a positive impact on economic development in the Netherlands. Dutch companies sell products and services to countries that receive or have received Dutch aid. Around €1.5 billion of Dutch goods imported by Indonesia, Bangladesh, Vietnam and Ghana in 2010 is equivalent to one-third of the total development aid budget of €4.3 billion.
- Dutch companies sell goods and services, e.g. technical instruments and medication, to the United Nations, which was worth €117 million (US$ 155 million) in 2010.
- Economic growth in China and India has led to increased Dutch exports, which have led to a rise in employment in the Netherlands.

The Social Economic Council stresses that it is crucial for the Dutch government to stimulate cooperation with other countries to solve issues concerning sustainability, security and social development in the Netherlands and abroad.

3 The economic effects of Dutch aid on the Netherlands: potential pathways

There are a number of economic channels through which Dutch aid might affect the Netherlands and its aid recipients.

- *Cheaper and increased level of imports* (Section 3.1). When aid increases productivity and reduces trade costs (e.g. through Aid for Trade (AfT), see Box 1), this reduces the cost of imports from aid recipient countries, which – depending on its import patterns – can affect the Netherlands.
- *Increased levels of exports* (Section 3.2). When aid increases growth and facilitates trade in recipients (see Box 1), they need and spend more resources on imports, which – depending on its export patterns – can benefit the Netherlands.[4]
- *Increased foreign direct investment (FDI) and overseas profits* (Section 3.3). Aid can pull or push FDI to developing countries, see Te Velde (2007), which can lead to increased rates of returns for Dutch multinationals.

There are a range of other channels which we do not consider in this paper: aid can contribute to the provision of global public goods (Te Velde et al., 2002) such as stable financial rules, a clean environment, a more secure world, or global knowledge – all of which can benefit the Netherlands and aid recipient countries.

Box 1: How does aid affect growth, productivity and trade costs in recipient countries?

Barrell et al. (2009) and Holland and te Velde (2012) review a large body of macro-econometric studies on the macro relationships amongst aid, growth and investment. The results are heterogeneous: some negative, some neutral and some positive. However, reviewing recent evidence on aid using the latest econometric methods and specifications, Tarp (2009) argues that 'evidence indicates that sustaining foreign assistance programs at reasonable levels can be expected to enhance the living standards of the world's poorest people'.

The literature also points to the difference between aid to productive sectors (e.g. infrastructure) and other aid. Much of the literature on the effects of investment in infrastructure estimates rates of return using macro-economic growth regressions. For example, Estache (2006) suggests that *economic* returns on investment projects average 30–40% for telecommunications, more than 40% for electricity generation, and more than 200% for roads (but when the outliers are excluded, the average is about 80% for roads). Returns tend to be higher in low-income than in middle-income countries (see Canning and Bennathan, 2000; Briceño-Garmendia et al., 2004). The social rate of returns on World Bank projects in infrastructure is around 20%. This estimate will be taken forward in the next section.

Aid can also reduce trade costs. There are several studies examining the impact of AfT (Basnett et al., 2012). For example, Bearce et al. (2010) suggest that a US$1 investment of total US government assistance to trade on average would increase exports by US$42–53.[5] Ferro et al.

(2012) examine the impact of AfT on manufacturing and services sectors. They find that a 10% increase in aid to transportation, information and communications technology, energy, and banking services is associated with increases of 2%, 0.3%, 6.8% and 4.7% respectively in manufacturing exports in receiving countries.

Cali and te Velde (2011) examine the impact of AfT and trade costs and exports. They find that a US$1 million increase in AfT facilitation is associated with a 6% reduction in the cost of packing, loading, and shipping to the transit hub. The estimations (column 4 of Table 3 in their publication) find that the elasticity of trade costs to increased AfT is significant with a value of around -0.10. Dutch AfT for Trade Policies and Regulations (AfT TPR) was around 10% of total AfT for Trade Policies and Regulations. Thus, Dutch AfT TPR adds around 10% to AfT TPR and a 10% increase in AfT TPR translates to a 1% decline in trade costs.

3.1 Dutch imports

First we discuss Dutch imports from developing countries. In the case of significant Dutch imports, a reduction in trade prices or an increase in the quality of trade products will help the Dutch economy in addition to recipient economies. We find that the value of Dutch imports from developing countries began to rise sharply in 2004, and despite a drop in 2009 had surpassed pre-global financial crisis levels by 2010. From values of well under €45 billion (US$50 billion) throughout the period 1995–2003, they had reached €106.8 billion (US$137.3 billion) by 2012 (Figure 7).

Figure 7: Value of Dutch imports from developing countries
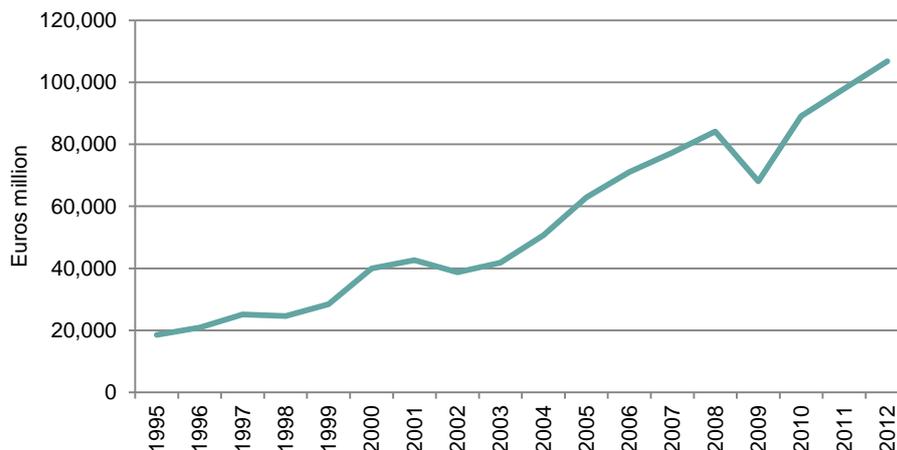
Source: UN COMTRADE database. Converted into Euros using OECD DAC exchange rates (http://stats.oecd.org/index.aspx?queryid=169#).

The share of imports from developing countries in total imports also rose sharply between 2002 and 2005, remained stable between 2005 and 2009, and then began to rise again (although the share in 2012, at 27.4%, was very slightly down from 2011's 27.6%) (Figure 8). Hence, the quality and price of imports from developing countries are increasingly relevant for the Netherlands.

Figure 8: Share of Dutch imports from developing countries
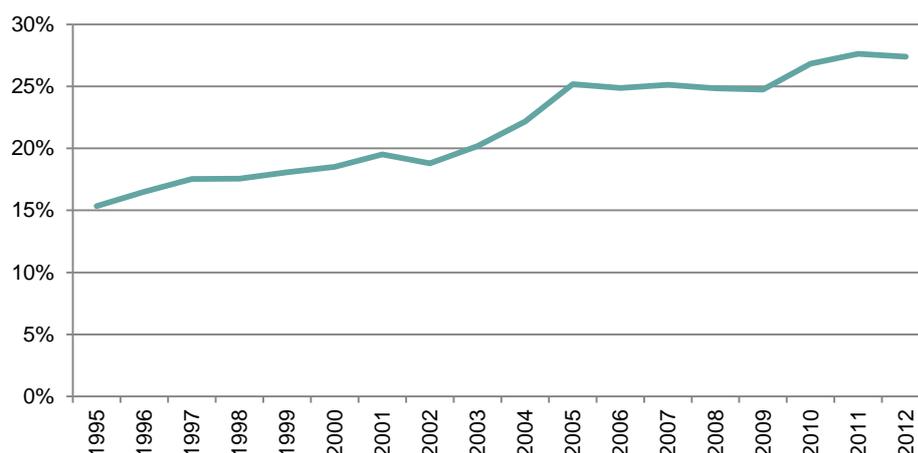
Source: Derived from data from UN COMTRADE database.

The composition of these imports remained largely unaltered throughout the period 1995–2012. Imports from seven of the top ten individual Dutch aid recipients (in total over the period 2001–12) grew faster than imports from the world as a whole over the same period, and those from four of them also grew faster than the developing country average (Figure 9).

Figure 9: Average annual growth in imports from top ten aid recipients, 2001–12
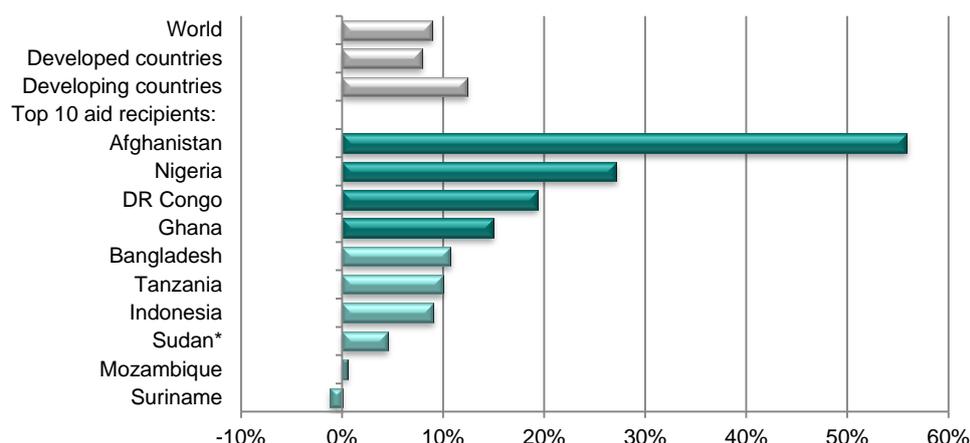
*Note: * The figure shown for Sudan is from 2001–10, owing to the establishment of South Sudan in 2011.*
Dark green bars denote faster growth than for developing countries as a whole, light green bars slower growth.
Source: Derived from data from OECD CRS bulk data files and UN COMTRADE database.

3.2 Dutch exports

The Netherlands is an open economy. It depends on growth in its export markets. Developing countries are important destinations for Dutch exports. We find that the pattern of Dutch exports to developing countries during the period 1995 to 2012 is very similar to that of imports. In terms of both value and share, a sharp upward trend is apparent from the beginning of this century onwards. From 1995–99 values of €11–15 billion (US$13–17 billion), by 2012 exports had risen to € 64.2 billion (US$82.5 billion) (Figure 10), and developing countries' share in total exports rose from 8.7% in 1995 to 14.9% in 2012 (Figure 11).

There was a somewhat greater change in the composition of exports to developing countries during the period than was the case for imports, with mineral fuels and lubricants growing by an average

annual 12.6% and animal/vegetable fats and waxes, food and live animals and manufactured goods falling by an average annual 9.3%, 6.1% and 4.1% respectively.[6]

Exports to all but one of the top ten individual Dutch aid recipients (in total over the period 2001–12) grew faster than exports to the world as a whole, and those to five of them also grew faster than the developing country average (Figure 12).

Figure 10: Value of Dutch exports to developing countries
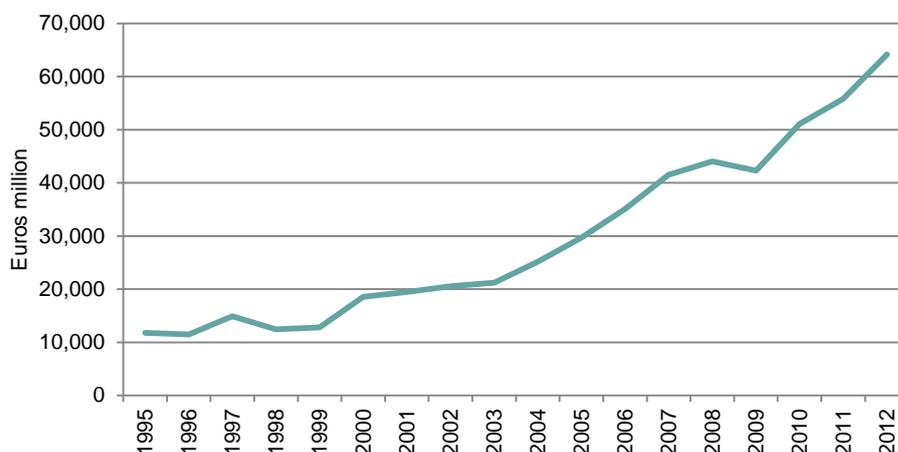
Source: UN COMTRADE database. Converted into Euros using OECD DAC exchange rates (http://stats.oecd.org/index.aspx?queryid=169#).

Figure 11: Share of Dutch exports to developing countries
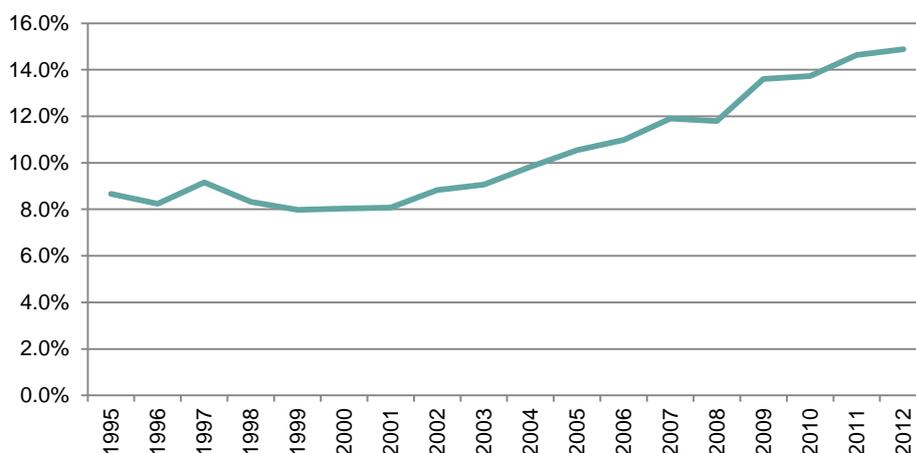
Source: Derived from data from UN COMTRADE database.

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[6]   Again, as with the data on imports, in only one year since 2000 do the data on sectoral exports add up to the total export value reported.

Figure 12: Average annual growth in exports to top ten aid recipients, 2001–12
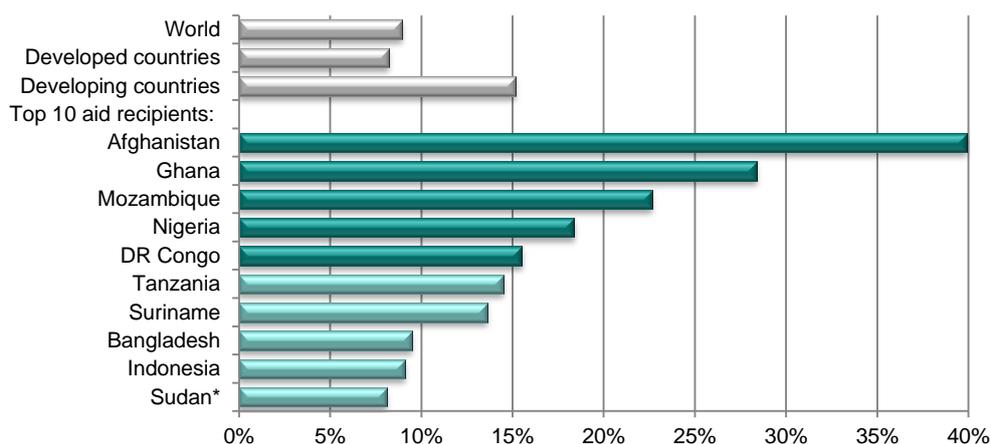
*Note: * The figure shown for Sudan is from 2001–10, owing to the establishment of South Sudan in 2011.*
Dark green bars denote faster growth than for developing countries as a whole, light green bars slower growth.
Source: Derived from data from OECD CRS bulk data files and UN COMTRADE database.

3.3 Foreign direct investment

As shown in Figure 13, Dutch outward FDI flows to developing economies have increased. Among developing economies, the major beneficiary regions include Asia and Latin America, with FDI flows to SSA around €1.5 billion on average each year.

Figure 13: Outward FDI from Netherlands to developing countries, 2001–12, by region
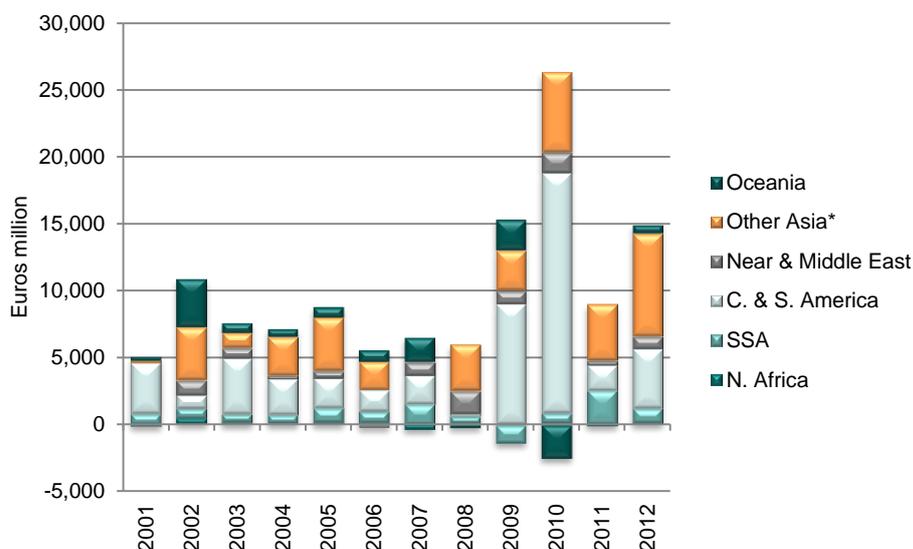
*Notes: * 'Other Asia' = Asia minus Near and Middle East.*
Includes OECD countries; excludes unallocated amounts to broader regions than shown here (e.g. Africa, unallocated)
Source: OECD.StatExtracts, FDI flows by partner country
(http://stats.oecd.org/Index.aspx?DataSetCode=FDI_FLOW_PARTNER#).

4 Simulating the effects of Dutch aid

In this section we assess the macro-economic impacts of Dutch aid. The analysis is undertaken using the National Institute's global econometric model NiGEM, which has been in use at the National Institute of Economic and Social Research for forecasting and policy analysis purposes since 1987. It is also used by a group of about 40 model subscribers, mainly in the policy community, including the Dutch Central Bank, the ECB, the OECD and the IMF.

NiGEM is a large-scale quarterly macro-economic model of the world economy. Most countries in the OECD are modelled separately, and there are also separate models of China, India, Russia, Hong Kong, Taiwan, Brazil, South Africa, Estonia, Latvia, Lithuania, Slovenia, Romania and Bulgaria. The rest of the world is modelled through regional blocks so that the model is global in scope.[7] The regional groups are consistent with IMF country groups, as defined for the World Economic Outlook database, except that they exclude countries that are modelled individually within NiGEM. This paper looks at the impacts of aid to the regions of SSA, Latin America and the Caribbean, Developing Asia and the Commonwealth of Independent States (CIS), as well as the largest developing countries.

All country and regional models in NiGEM contain the determinants of domestic demand, a supply side, export and import volumes, prices, current accounts and net foreign assets. Output is determined in the long run by factor inputs and technical progress interacting through production functions, but is driven by demand in the short to medium term. Economies are linked through trade, competitiveness and financial markets and are fully simultaneous.[8]

Following the approach by Holland and te Velde (2012) this paper simulates the effects of Dutch aid on both the developing countries and the Dutch economy. We consider two scenarios: (i) Dutch aid equal to 0.7% of GNI per annum, which gives around €22,694 million over the period 2013–17, and (ii) Dutch aid gradually declining from around 0.7% of GNI in 2013 to 0.55% of GNI in 2017, which corresponds to a total cut of about €3,225 million over the period 2013–17. The scenarios are presented in Table 1.

Table 1: Aid scenarios

Scenarios	2013	2014	2015	2016	2017
1. Net ODA in Euro	4,276	4,431	4,565	4,625	4,797
in percent of GNP	0.7	0.7	0.7	0.7	0.7
2. Net ODA, Rutte II, in Euro	4,154	3,735	3,913	3,898	3,769
in percent of GNP	0.68	0.59	0.6	0.59	0.55

Source: Ministry of Foreign Affairs (2013).

The objective of this paper is to simulate the impacts of aid had it remained at 0.7% of GNI, as well as the effects of the current spending plans, on both the recipient countries and the Dutch economy.

4.1 Building the model

It is assumed that over the period 2013–17 Dutch aid will be directed to individual developing regions in the same way as it was directed in 2012. Table 2 shows regional distribution of Dutch aid. It is also assumed that the 30% of Dutch aid given in multilateral aid is distributed in the same way as bilateral

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[7]   See Appendix A for details on the composition of regional groupings.
[8]   Further details on the NiGEM model are available on http://nimodel.niesr.ac.uk/.

aid. Multilateral and Dutch bilateral aid allocate a similar share to economic and social infrastructure, so we apply the shares in Table 3 also to Dutch multilateral aid.[9]

Table 2: Bilateral Dutch aid to individual regions, 2012

	SSA	CIS	Dev. Europe	Far East	Latin America	Middle East
Share in total aid	60.1%	0.7%	3.0%	15.3%	8.4%	5.3%

Notes:
The regions above exclude the largest developing countries: Brazil, China, India, South Africa, as well as Indonesia, Mexico, Turkey and Vietnam. Aid to the excluded countries amounts to about 7% of total Dutch aid.
The value of disbursements to unspecified destinations was distributed between the individual regions and countries according to each region's/country's share in total disbursements to known destinations.

Both the short- and long-run impacts of aid will depend not only on the amount of aid and where it is directed, but also on how the money is spent. This paper considers several different channels through which aid will affect the recipient countries, and there are essentially three ways in which the aid may be utilised (Barrell et al., 2009; te Velde and Holland, 2012).

First, the aid can be treated as a debt relief reducing the stock of foreign debt. This will have no direct effect on the real economy in the recipient country, but it will reduce the outflows from the recipient country to finance the stock of foreign debt.

Second, the money can be used to finance current consumption. This will have an immediate impact on the domestic demand, boosting growth in the short run.

Third, the funds can be used to finance productive investment, raising the long-run productive capacity of the economy. This will have an impact on the economy both in the short run and in the long run. Assuming that investment in infrastructure can raise productivity growth for a sustained period of time, this will have positive spill-over effects, speeding the process of technology adoption in the developing countries.

Finally, the aid may also contribute to trade facilitation. There is a positive relationship between AfT and trade costs and we assume that that aid contributes to a reduction in export and import prices in the recipient countries.

The macro-economic effects of Dutch aid will depend on how much money is spent on consumption, boosting GDP in the short run; and investment, supporting GDP both in the short and long run. Table 3 shows the relative weights of these two components for individual regions. Aid directed towards economic and social infrastructure corresponds to an investment stimulus, raising the capital stock and, as a result, productive capacity of the recipient economy. All other types of aid are treated as used for domestic consumption.

Table 3: Share of Dutch bilateral aid spent on investment and consumption (as of 2012)

	Consumption	Investment
SSA	0.44	0.56
CIS	0.39	0.61
Developing Europe	0.35	0.65
Far East	0.39	0.61
Latin America	0.51	0.49
Middle East	0.49	0.51

Source: Analysis in Section 2 based on OECD CRS database.

Depending on the region, between 35% and 51% of aid from the Netherlands is spent on consumption, with the remaining part spent on investment. Thus, over the period 2013–17 around €9.7 billion (about 43% of the total €22.5 billion) will be spent on consumption and around €12 billion (57%) will contribute to increases in the productive capacity in the developing countries.

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[9] The share of economic and social infrastructure in Dutch bilateral aid was 56.3%. This is similar to the 63% that multilateral organisations spent on infrastructure in 2012.

Taking into account the purchasing power parity and the fact that €1 can buy much more in the recipient countries than it can in the Netherlands (for details on purchasing power parities see Appendix B), Dutch aid at around €22 billion can provide quite a significant boost to output in the developing countries. Many of the developing countries are also much smaller than the Dutch economy, which implies that, in relation to GDP, the same money will matter relatively more there.

The aid directed to infrastructure will raise the capital stock and potential output in the recipient countries. This effect is calibrated on the basis of assumptions concerning capital to output ratios in individual regions (2.6 in Africa, 2.8 in Developing Asia, and 3 in the CIS and Latin America), and a capital depreciation rate of 10%. The long-run effects of Dutch aid on the productive capacity in the developing regions are shown in Figure 14.[10]

Figure 14: Impact of capital accumulation on potential output of 0.7% ODA/GNI
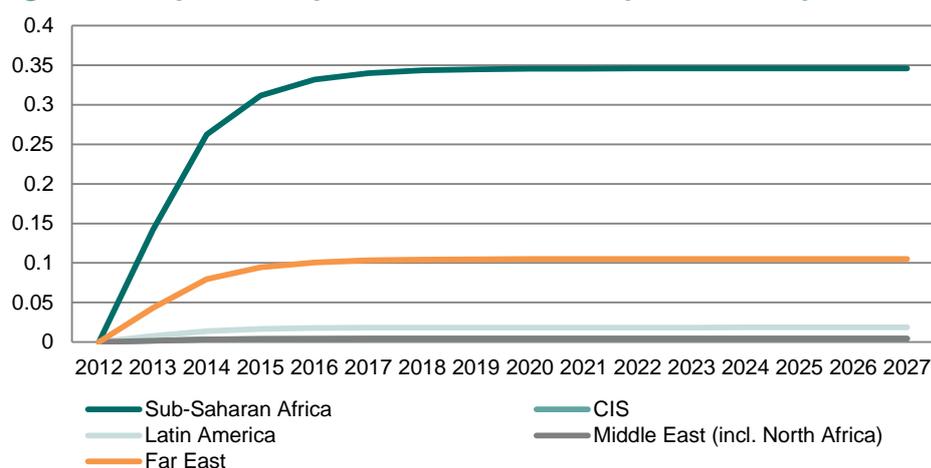
The biggest long-run impacts are expected to materialise in SSA where, as a result of Dutch aid, potential output may increase by 0.35%. In the Far East region output may increase by around 0.1% on a permanent basis. Assuming that the investment has 20% social rate of return, the effects of capital accumulation on potential output will increase by a further 20%. These productivity gains will be reflected in trend productivity, which is expected to rise by 0.07% in SSA, and 0.02% in the Far East.

4.2 Running the model – impact of 0.7% ODA/GNI on recipient countries

Aid spent on debt reduction …

Assuming that all Dutch aid is spent to reduce the stock of foreign debt in the developing countries, aid flows will result in a deterioration of the current account balance in the Netherlands and an improvement in the current accounts in the recipient countries. As a result, aid recipients will record an improvement in their net foreign assets while the donor country will record a deterioration. In net terms, the net increase in assets of the recipients will be equal to the net decline in assets of the donor country. The effects of the aid flows corresponding to 0.7% of Dutch GNI will result in a deterioration of the Dutch current account by about 0.4 percentage point on average over the five-year period 2013–17. The current accounts in the developing countries would improve by up to 0.13 percentage point in SSA and a similar amount in Developing Europe. In most of the other regions, current account improvements would be relatively modest (below 0.02 percentage point).

We assume that aid is financed through taxes. Dutch aid worth 0.7% of GNI per annum over the period 2013–17 corresponds to about €22.5 billion. This model compares the 0.7% of GNI level to a baseline scenario where there is no aid at all, so we assume in the model that to finance this size of aid taxes would need to go up. Nevertheless, the theoretical increase in the tax rate would be relatively

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[10] Results for the largest developing countries available upon request.

small. The tax rate would need to increase temporarily by about 0.8 percentage point (the tax rate effects are much smaller if we allow for productive uses of aid, as investigated below).

The debt relief effects are thus relatively limited, both for the recipient countries and for the donor country. The impacts on the recipient countries and international trade change if the aid is spent in a productive way, on consumption and investment.

… on consumption …

Assuming that all aid is spent on goods and services in the recipient countries, and building on the previous scenario, we simulate the effects of a temporary rise in consumption. Figure 15 shows the short-term impacts of Dutch aid on GDP in individual developing regions. An aid-driven boost to consumption provides a short-run support to GDP. Should the aid flows stop in 2017, we would see a drop in domestic demand in the developing countries from 2018 onwards.

Figure 15: GDP impacts of aid spent on consumption, 0.7% ODA/GNI
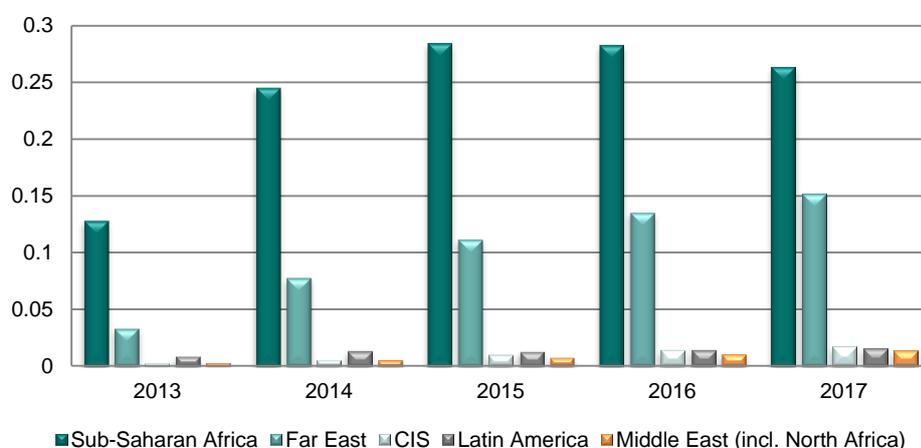
The biggest effects of Dutch aid are expected to materialise in SSA, where aid may boost GDP by up to 0.3% in the short run. The consumption channel generates a 0.15% increase in GDP in the Far East region. In all other regions the effects are relatively muted.

… on investment ...

Taking the above scenario as a starting point, we then turn to simulating the impacts of aid directed towards investment in infrastructure. Assuming that around 57% of aid (from 49% to 65%, depending on the region) is spent on investment, productive capacities in the developing countries may increase relatively substantially. Allowing for the positive spill-overs of investment materialising through the technological progress channel as discussed above, GDP increases further, both in the short run and in the long run. The impacts are illustrated in Figure 16. GDP permanently remains above the baseline. Over the period 2013–17 GDP in SSA goes up by up 0.45%. In the Far East region, output increases by around 0.2%. In the long run output in the recipient countries increases by up to 0.3%.

Figure 16: GDP impacts of aid spent on consumption and investment, 0.7% ODA/GNI

■ Sub-Saharan Africa ■ Far East ■ CIS ■ Latin America ■ Middle East (incl. North Africa)
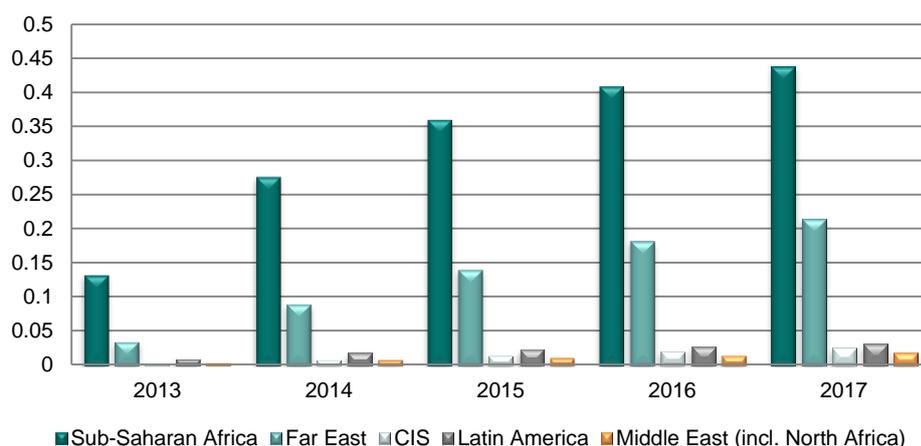
… and on trade facilitation

Ancillary to the above, we introduce trade facilitation effects. Aid directed towards trade is expected to facilitate trade, reducing the costs of imports from and exports to the aid recipient countries. On the basis of shares of AfT to total aid, and estimates found in the literature, we assume that, in response to spending 0.7% of GNI on aid, export and import prices in the recipient countries may decrease by about 2–3 % (endogenous change, taking into account the internal dynamics of the model). The model ensures that there is an endogenous feedback between export and import prices in all countries and regions. Figure 17 shows the results for the recipient countries.

Figure 17: GDP impacts of aid spent on consumption, investment, and allowing for the effects of trade facilitation, 0.7% ODA/GNI

■ Sub-Saharan Africa ■ Far East ■ Latin America ■ Middle East (incl. North Africa) ■ CIS
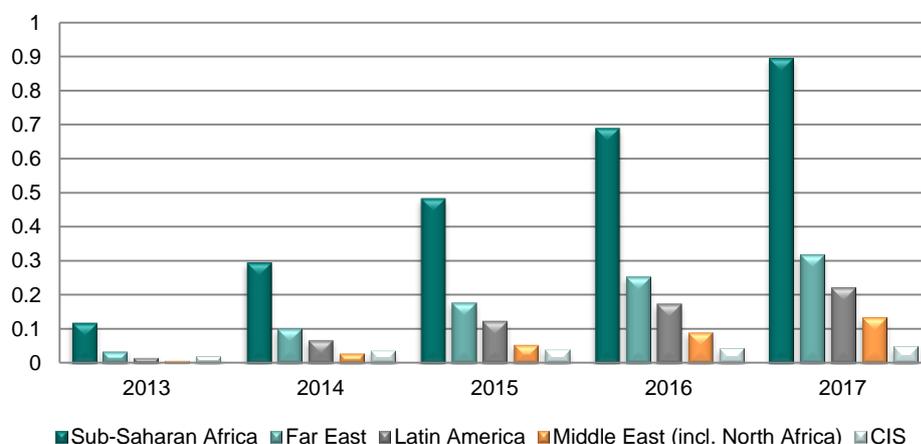
As a result of Dutch aid, spent in a productive way, GDP in the recipient countries may rise significantly. In SSA, by the end of 2017, GDP may increase by close to 1%. Economic activity in the Far East region would be higher by around 0.3%. In Latin America and the Middle East region output may expand by up to 0.2%.

4.3 Impact of 0.7% ODA/GNI on the Dutch economy

Below we show the impacts of the combined scenario presented above (effects of aid directed towards consumption, investment and facilitation of trade) on the Dutch economy. This will allow us to infer the economic benefits of Dutch aid for the domestic economy. Figure 18 shows the impacts on Dutch GDP over the period 2013–17 in terms of percent deviations from baseline, and Figure 19 shows the absolute impacts.

Figure 18: The impacts of spending 0.7% of GNI on aid on the Dutch economy (percent deviations from baseline)
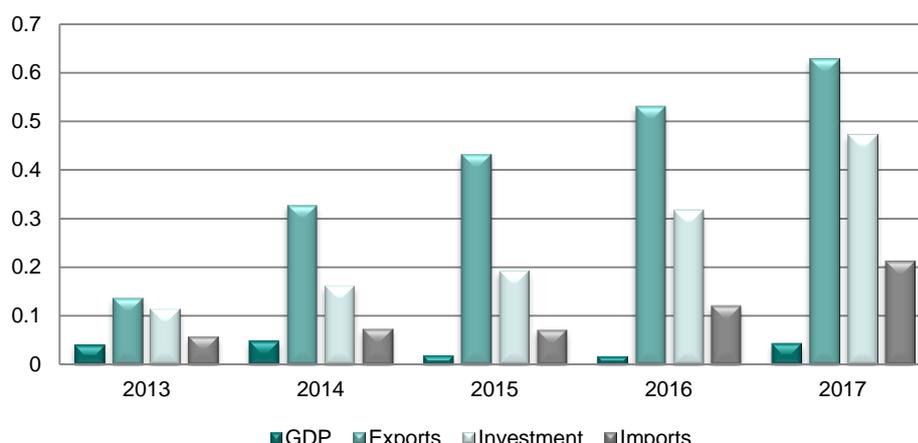
The Dutch economy may benefit from spending 0.7% of GNI on aid to the developing countries. Our simulations show the Dutch economy may receive an annual boost of around 0.03% of GDP on average over the period 2013–17. GDP initially increases, then it slows down slightly (reflecting weaker consumption due to higher taxes) before going up again. Both investments and exports would increase, by around 0.25% and 0.4% respectively, and imports by 0.11% on average over the period 2013–17.

Figure 19: The impacts of spending 0.7% of GNI on aid on the Dutch economy (absolute deviations from baseline)
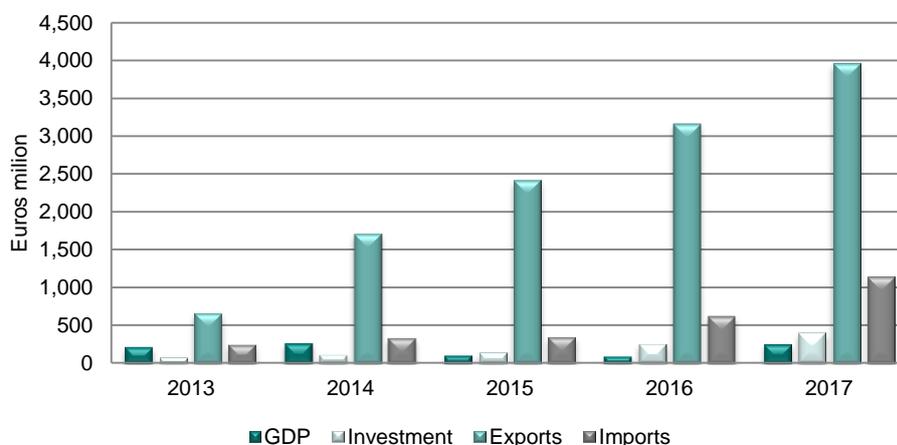
Over the five-year period 2013–17 GDP value would increase by €0.94 billion, giving an annual average increase of about €190 million. Investments would increase by around €200 million per annum on average, and net exports by around €1.84 billion per annum on average. Terms of trade would improve – Figure 20 shows export and import prices.

Figure 20: The impacts of spending 0.7% of GNI on aid on Dutch terms of trade (percent deviations from baseline)

Import prices   Export prices

4.4 Impact of aid post-budget cuts on the Dutch economy

For comparison, below we analyse the scenario corresponding to declining levels of aid over the period 2013–17, from 0.7% to 0.55% of GNI. Figure 21 shows the impacts on the Dutch economy for the period 2013–17.

Figure 21: The impacts of spending 0.7%–>0.55% of GNI on aid on the Dutch economy (percent deviations from baseline)

GDP   Exports   Investent   Imports
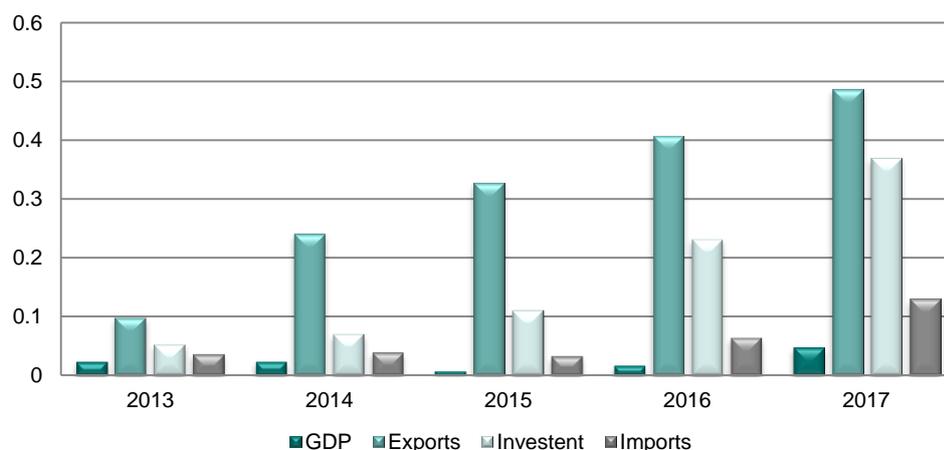
With current spending plans, our simulations show the Dutch economy may receive an annual boost of around 0.024% of GDP on average over the period 2013–17. Investments and exports would increase, by around 0.17% and 0.31% respectively. Over the next five years GDP value would cumulatively increase by €0.686 billion, giving an annual average increase of about €137 million. Investments would increase by around €132 million per annum on average, and net exports by around €1.51 billion per annum on average.

Next, we turn to comparing the two scenarios. Table 4 shows accumulated absolute effects of 0.7% ODA/GNI in the first column. As compared to the no aid scenario GDP would be higher by about €0.94 billion. Exports are expected to increase by €11.9 billion and investment by €1 billion over the same period. As compared to the current spending plans, GDP would be higher by about €250 million, and exports would be up by €2.86 billion. The positive effects of aid materialise not only in the short run, but also in the long run. The last column compares the accumulated gain of spending 0.7% GNI on aid with the plan of current cuts. In the long run, GDP under the 0.7% ODA/GNI

scenario would be higher by about €1.1 billion. Exports and imports would be boosted by about €17 billion and €18 billion respectively, while investment would be up by about €2 billion.

Table 4: Accumulated absolute effects of different aid shocks

	Accumulated gain (2013–17) of 0.7 % ODA/GNI compared to no aid	Accumulated gain (2013–17) of 0.7% ODA/GNI compared to current spending plans	Accumulated gain (2013–27) of 0.7% ODA/GNI compared to current spending plans
GDP (in Euros billion)	0.94	0.25	1.11
Exports (in Euros billion)	11.93	2.86	17.15
Imports (in Euros billion)	2.71	1.18	18.66
Investment (in Euros billion)	0.99	0.33	2.32

Figure 22 compares the impacts of the 0.7% ODA/GNI scenario with the effects of the current aid spending plans – we show percent deviations from baseline, where the baseline denotes zero aid. Under the 0.7% ODA/GNI scenario GDP and all its investigated components would be higher. The figures clearly show that aid pays for itself.

Figure 22: The impacts of spending 0.7% and 0.7%–>0.55% of GNI on aid on the Dutch economy – scenario comparison
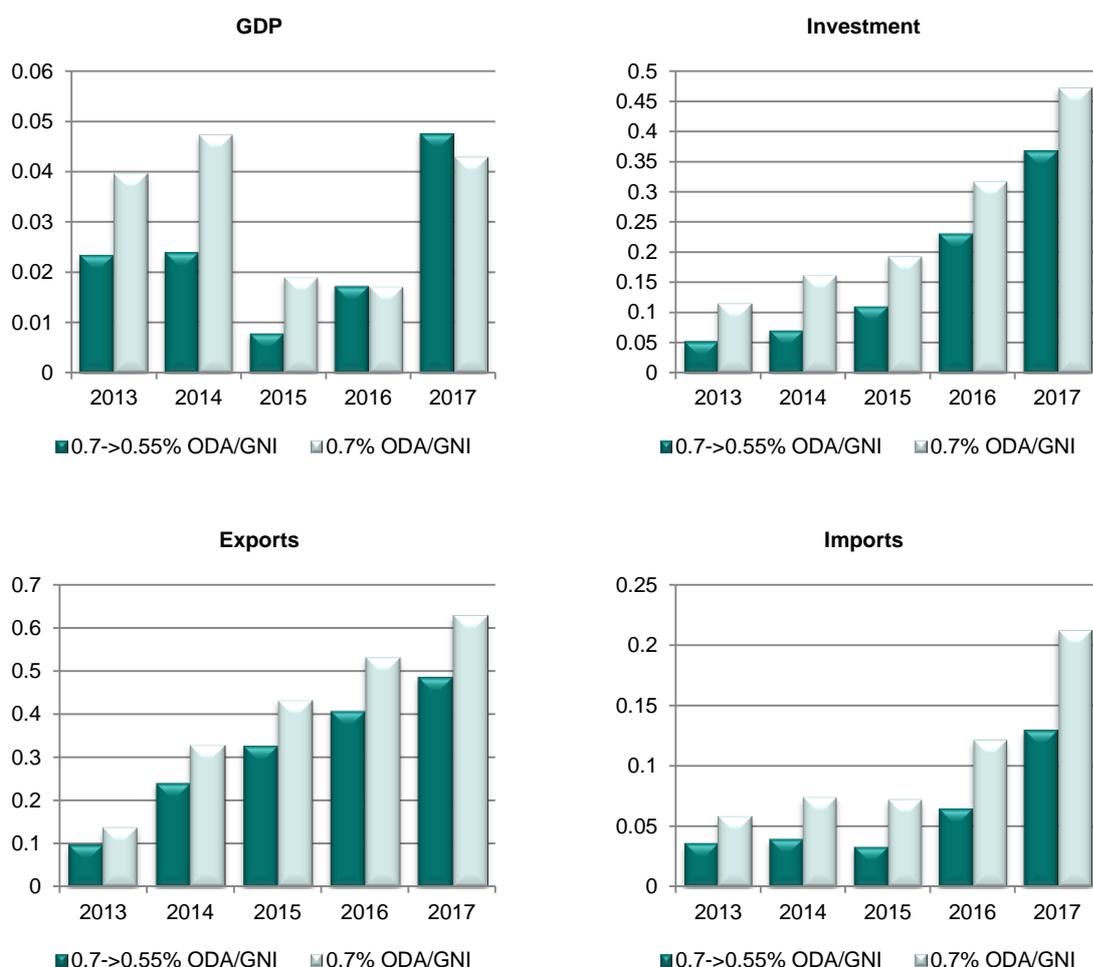
As can be seen in the GDP section of Figure 22, in 2017 GDP is lower under the higher aid scenario. This results from the effects of the dynamics and feedback loops in the model. This effect is, however,

temporary and from 2019 onwards, GDP under the 0.7% ODA/GNI scenario is permanently higher than that under the 0.7–>0.55% ODA/GNI scenario (Figure 23).

Figure 23: The longer-term impact on Dutch GDP of spending 0.7% and 0.7%–>0.55% of GNI on aid
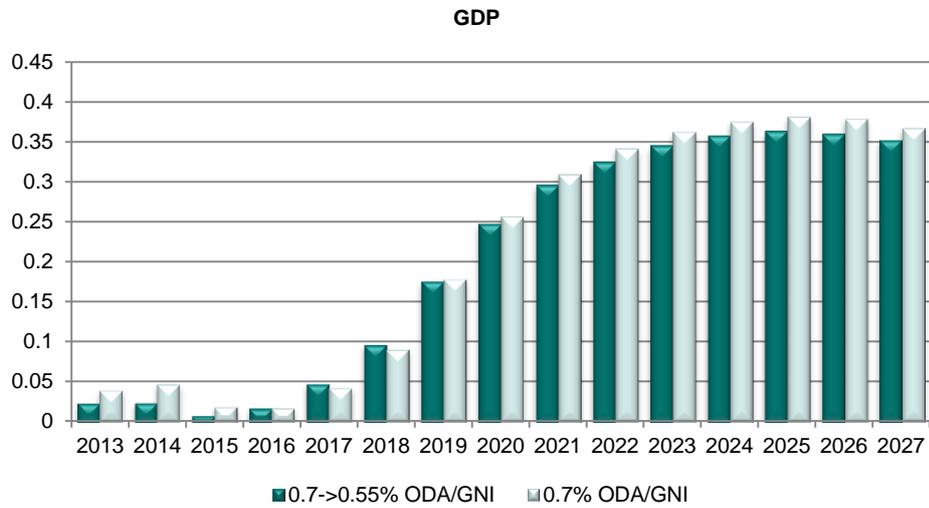
5 Conclusions and policy implications

After a long period when Dutch aid amounted to more than 0.7% of GNI, it is currently on a path towards declining to 0.55% of GNI by 2017. This paper finds that this decline in aid is not only bad news for development but is also self-defeating for the Dutch. The Netherlands is an open economy increasingly dependent on developing countries for exports and also cheap and reliable imports and aid can facilitate mutually beneficial trade with developing countries.

The quality and price of imports from developing countries are increasingly relevant for the Netherlands. The value of Dutch imports increased from well under €45 billion (US$50 billion) throughout the period 1995–2003 to €106.8 billion (US$137.3 billion) by 2012. Imports from seven of the top ten individual Dutch aid recipients (in total over the period 2001–12) grew faster than imports from the world as a whole over the same period, and those from four of them also grew faster than the developing country average.

The Netherlands also depends on growth in its export markets and developing countries are increasingly important destinations for Dutch exports. Exports to developing countries increased from €11–15 billion (US$13–17 billion) over 1995–99 to € 64.2 billion (US$82.5 billion) in 2012 and developing countries' share in total exports rose from 8.7% in 1995 to 14.9% in 2012. Exports to all but one of the top ten individual Dutch aid recipients (in total over the period 2001–12) grew faster than exports to the world as a whole, and those to five of them also grew faster than the developing country average.

Evaluations of Dutch aid by the OECD and IOB are broadly positive in terms of impacts on recipients. In addition, some qualitative accounts have begun to suggest that the Dutch economy benefits from aid, either directly through selling products and services to the UN, or indirectly through trade. However, there has never been a quantitative account of Dutch aid in its entirety on recipient countries or on the Netherlands.

This report has examined the effects of aid, reporting the economic effect on the Netherlands (GDP, exports, investment) of investing 0.7%/GNI as aid between 2013 and 2017 and comparing this to (i) no aid and (ii) the current planned level of aid. The combined shock, calibrated on the basis of Dutch aid by country, region and sector, can boost GDP by up to 1% in SSA.

Moreover, aid pays for itself. Aid leads to lower trade costs, cheaper Dutch imports, increased exports and a range of other effects not considered in the model. The total effects lead to an increase of Dutch GDP of 0.03% each year over 2013–17, or an accumulated € 0.94 billion over the entire period. This means that Dutch aid is estimated to have a rate of return of 4%, a good investment and consistent with required returns for development finance institutions such as FMO (Slegtenhorst et al., 2014). Exports would increase by €11.9 billion over the period. If current plans for aid spending are maintained, the Netherlands would lose €250 million in GDP compared to a 0.7% scenario, or €330 million in terms of investment.

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Appendix A: Regional composition in NiGEM

Countries modelled individually

Europe: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Developing Europe, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Russia, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, U.K.

Americas: Brazil, Canada, Mexico, U.S.A.

Asia/Australia: Australia, China, Hong Kong, India, Indonesia, Japan, South Korea, New Zealand, Singapore, Taiwan, Vietnam

Africa: South Africa

Regions – groups of countries modelled in blocks

Country groupings correspond to the IMF's groupings. Individual regions encompass the following countries:

Africa – corresponds to the IMF's group Sub-Saharan Africa, excl. South Africa (which is modelled separately in NiGEM). This group includes: Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Democratic Republic of Congo, Republic of Congo, Cote d'Ivoire, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe.

Far East – corresponds to the IMF's Developing Asia, excl. China, India, Indonesia, and Vietnam (which are modelled individually). This group includes: Republic of Afghanistan, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, Fiji, Kiribati, Lao People's Democratic Republic, Malaysia, Maldives, Myanmar, Nepal, Pakistan, Papua New Guinea, Philippines, Samoa, Solomon Islands, Sri Lanka, Thailand, Democratic Republic of Timor-Leste, Tonga, Vanuatu.

Middle East – is based on the IMF's group Middle East and North Africa, and we add advanced Middle East economies that are not modelled separately (Israel). The group includes: Algeria, Bahrain, Djibouti, Egypt, Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Syria, Syrian Arab Republic, Tunisia, United Arab Emirates, Republic of Yemen.

Latin America – is based on the IMF's group Western Hemisphere, excl. Brazil and Mexico (which are modelled separately). This group includes: Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Chile, Colombia, Cost Rica, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Peru, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Venezuela.

CIS – corresponds to the Commonwealth of Independent States, excl. Russia (modelled individually). This group includes: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Mongolia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan.

Developing Europe – corresponds to the IMF's Central and Eastern Europe, from which we exclude the countries modelled individually (Bulgaria, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Turkey), and add the advanced European countries that are not modelled separately (Iceland, Luxembourg, Malta and Cyprus). This group includes: Albania, Bosnia and Herzegovina, Croatia, Cyprus, Iceland, Luxembourg, Former Yugoslav Republic of Macedonia, Malta, Montenegro, and Serbia.

Appendix B: Purchasing Power Parity in NiGEM

Figure B.1 shows the purchasing power parity for the main developing regions (calculated on the basis of the IMF data).

Figure B.1: Purchasing power parity in the developing regions
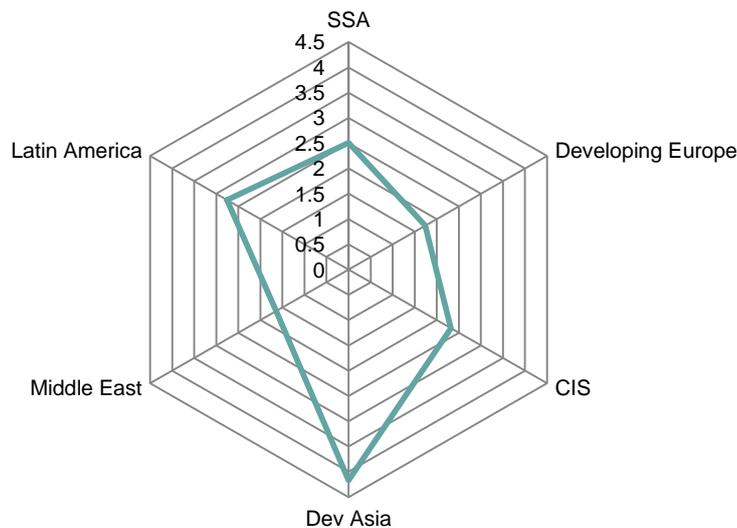
Purchasing power parity is highest in the Developing Asia region. In all other developing countries, purchasing power parity is close to 2 which means that 1 dollar in the Netherlands is worth at least 2 dollars in the recipient countries.