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Four Futures of the Netherlands; Production, labour and sectoral structure in four scenarios until 2040

Dutch policymakers are confronted by several strategic challenges that hold great significance for long-run economic perspectives. There is great uncertainty regarding the scale of future bottlenecks and the economic conditions under which they will occur. This study offers four scenarios with plausible developments for the Dutch economy at the macro and sectoral levels until 2040. The study builds on *Four Futures of Europe*, published by CPB in 2003, which describes four scenarios with plausible future developments for Europe.

The scenarios for the Dutch economy contain a wide range of results for many variables. For instance, the level of GDP per capita in 2040 will be between 30% and 120% higher than the current level. The scenarios with high growth are also characterised by more inequality and lower environmental quality. In all scenarios, ageing has a negative effect—on labour supply and employment growth and on the ratio of the working to the not-working population. An increase in participation, especially of women and older workers, may counterbalance these effects. Sectoral employment shares will shift strongly, particularly from agriculture and manufacturing to services and health care. This shift is a continuation of a process that has already been going on for decades.

Contents

1 Introduction

The Netherlands is struggling with some important strategic challenges and uncertainties. How can the country best prepare itself for the ageing of the population? Will the welfare state still be affordable in the future? Will inequality increase? What level of environmental pollution is acceptable, and how can this goal be reached? What is the state of Dutch competitiveness? How will the rise of low-wage countries affect the Dutch economy?

Formulating policy for such strategic questions is complicated, for a number of reasons. The questions mainly concern the long-term future. There is great uncertainty about the scale of future bottlenecks and about the economic conditions under which they will occur. It is difficult to make predictions about what will happen ten years from now, let alone twenty or forty years. Timely policies that anticipate the challenges can help alleviate future problems. Wrong choices, however, may actually aggravate them. While postponing policymaking has the advantage that more information will become available over time, delay may also result in the need for even harsher measures at a later date.

How can policymakers deal with uncertainty about the (distant) future when formulating strategic policy choices? A good way to manage uncertainty is the use of scenarios. These internally consistent descriptions of possible future developments neither predict the future nor indicate which developments are most likely. The uncertainty is too great for such judgements. Instead, scenarios explore the future by consistently working out different lines of thought. Scenarios are generally arranged around certain key uncertainties that are central for the issues to be addressed. The challenge is to choose these key assumptions so that the scenarios differ enough from each other to do justice to the uncertainty, without rendering one or more of them implausible.

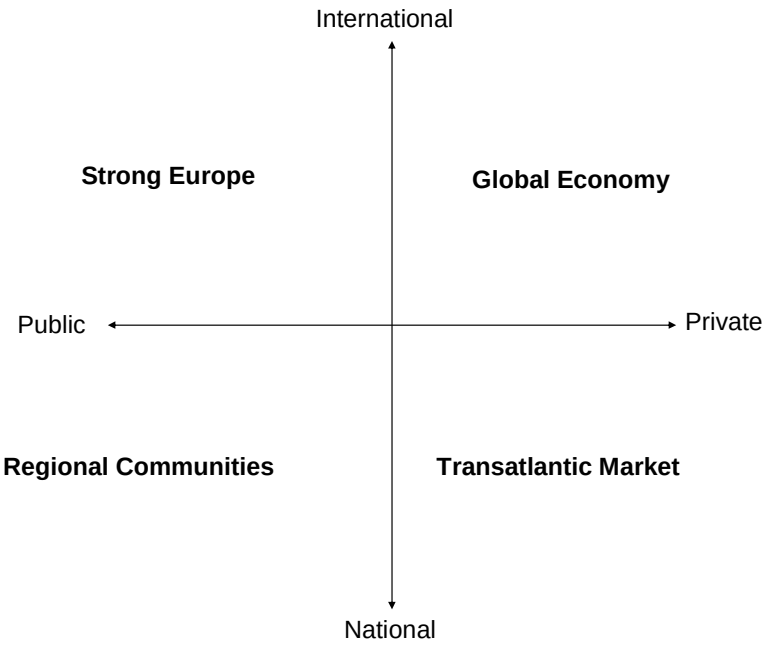
In mapping out possible futures for the Dutch economy in four scenarios, this study serves as a background for analysing strategic issues that take place in the long-term future. The central point of departure is that the Netherlands is inextricably connected with Europe. Images of the future of the Netherlands, therefore, cannot be contemplated without corresponding images of Europe. In 2003, CPB published the study *Four Futures of Europe* (De Mooij and Tang, 2003), which described four possible scenarios for Europe. This study, which summarises a quantitative elaboration of those scenarios for the Netherlands at the macro and sectoral levels until 2040 (Huizinga and Smid, 2004), will function as a starting point for several follow-up studies that explore specific policy areas and present policy options. For instance, in cooperation with several other institutes, CPB has already initiated a follow-up study about the physical aspects of future economic development.

2 Two key uncertainties

Just as *Four Futures of Europe, Four Futures of the Netherlands* is organised around two key uncertainties. The first concerns the extent to which countries are willing and able to cooperate internationally. At the European level, countries face a two-pronged challenge: remaining decisive while maintaining legitimacy. Will Europe opt for a common approach to cross-border problems, or will member states attach more importance to their own sovereignty and identity? Willingness and ability to cooperate internationally are vitally important also at the global level, in areas such as the environment and trade liberalisation.

The second key uncertainty for Europe concerns the reform of the public sector. All European countries will have to deal with an ageing population, ongoing individualisation, and, probably, increasing wage differences between high- and low-skilled workers. These trends increase the pressure on the public sector. Which level of social services and welfare provisions will countries choose? Which tasks will be performed by the public sector, and which will be left to the private sector?

Figure 2.1 Key uncertainties and the four scenarios



These two key uncertainties form the basis for the four scenarios. The link between the uncertainties and the scenarios is depicted in Figure 2.1. Each quadrant in this figure represents a scenario. In *Regional Communities*, where countries attach much value to their sovereignty and identity, reform of the public sector hardly takes place. In *Strong Europe*, countries maintain a strong welfare state, but also cooperate on public issues such as environmental concerns. In *Transatlantic Market*, reform of the welfare state does take place, but countries are not willing to give up part of their sovereignty. In *Global Economy*, international cooperation—especially on trade issues—is combined with a thorough reform of the public sector.

These four scenarios lead to large differences in economic growth. Growth is highest in the *Global Economy* scenario, in which international cooperation and market orientation are combined. Yet, economic growth is only one side of the coin. Market orientation indeed leads to higher economic growth, but also to higher income differences between high- and low-skilled workers and between the employed and unemployed. Moreover, in a market-oriented society, cross-border environmental concerns receive less attention and are not addressed effectively. International cooperation offers advantages in the areas of economics and the environment, but comes at the expense of the sovereignty and identity of individual countries.

Table 2.1 Summary table

	Regional Communities	Strong Europe	Transatlantic Market	Global Economy
Growth of GDP per capita	0.7	1.2	1.7	2.1
Income-equality	+	0	−	−
International environment	0	+	−	− −
Sovereignty and identity	+	−	0	−

Although this study primarily discusses the economic developments in the scenarios, other issues are indispensable for a well-balanced judgement of the scenarios. Table 2.1 therefore provides a broader perspective on the scenario results. The study makes no judgement on how these different outcomes should be weighed; this is a political issue. The next section presents a bird’s eye view on the scenarios for Europe.

3 Four scenarios for Europe

3.1 Regional Communities

In the *Regional Communities* scenario, countries are strongly attached to their own sovereignty, which hinders the European Union in carrying out institutional reform. International trade liberalisation is also brought to a standstill, and the world falls apart into a number of trading blocks. International environmental issues are effectively shelved. Still, the environmental burden is relatively low, because of the low economic growth. This scenario offers few reforms of the public sector. Collective arrangements remain in place, with an emphasis on equal income distribution and solidarity.

The lack of incentives in the welfare state, together with the high tax and social premium rates, bring about relatively low labour participation and high unemployment. Lack of competition reduces the need for firms to innovate. The eroded markets inhibit rapid diffusion of knowledge, and the lower income inequality provides only a modest stimulus to build up human capital. Labour productivity and the economy grow slowly.

3.2 Strong Europe

In *Strong Europe*, much attention is paid to international cooperation on public issues. The European institutions are successfully reformed, and countries yield part of their sovereignty. Europe thus becomes an influential player in the international economic and political arena, able to tackle international environmental issues in a coordinated way. Europe makes some concessions to the United States, which ratifies the Kyoto protocol. Turkey becomes a member of the European Union.

Social-economic policy is, as in *Regional Communities*, aimed at solidarity and an equal distribution of income—although some reforms do take place. These reforms, together with higher investment in education and research and a larger market, lead to greater labour productivity and higher economic growth in *Strong Europe* than in *Regional Communities*.

3.3 Transatlantic Market

In the *Transatlantic Market* scenario, the expansion of the European Union is not a political success. Countries are too attached to their sovereignty and try to solve problems at the national

level. A far-reaching trade agreement is made between the United States and Europe, however, which over time leads to a unified internal market. The scenario is characterised by governments that focus on the individual responsibility of citizens. The welfare state is cut back and public services are sobered down. As a result, income inequality rises. Diminished union power leads to a more flexible labour market.

The cutbacks in the welfare state increase labour participation. The international competition increases the incentives to innovate, and the higher income inequality makes education more attractive. Labour productivity growth and economic growth are high. Cross-border environmental problems are not addressed, but the high prosperity does lead to local environmental investments aimed at, for instance, noise and odour reduction and maintenance of the countryside.

3.4 Global economy

In *Global Economy*, the EU expands even further eastwards. In addition to Turkey, countries like the Ukraine also join. The WTO negotiations are successful, and international trade flourishes. Political integration does not get off the ground, however. International cooperation in areas other than trade fails. As in *Transatlantic Market*, the government in this scenario emphasises the individual responsibility of citizens.

The strong worldwide economic integration in *Global Economy* gives an additional boost to labour productivity. The growth of prosperity is therefore highest in this scenario. As in *Transatlantic Market*, no agreement is made regarding the tackling of cross-border environmental problems. Together with the worldwide high economic growth, this leads to substantial environmental pollution. As in *Transatlantic Market*, high prosperity does lead to local environmental initiatives.

4 The most important results for the Netherlands

The differences between the scenarios in international cooperation and in the degree to which the public sector is reformed have great consequences for the economic outcomes in the scenarios. Developments of employment and of labour productivity are the driving forces behind economic growth. Employment development is influenced by the labour supply and the way the welfare state is organised. Table 4.1 provides an overview of the most important macroeconomic outcomes in the four scenarios.

Table 4.1 The most important outcomes in the four scenarios

		Regional Communities	Strong Europe	Transatlantic Market	Global Economy
	1971–2001	2002–2040	2002–2040	2002–2040	2002–2040
	changes per year in %				
Population	0.7	0.0	0.4	0.2	0.5
Labour supply	1.1	− 0.4	0.1	0.0	0.4
Employment	0.9	− 0.5	0.1	0.0	0.4
Labour productivity	1.9	1.2	1.5	1.9	2.1
GDP (market prices)	2.6	0.7	1.6	1.9	2.6
GDP per capita	1.9	0.7	1.2	1.7	2.1
	level in % labour force				
Unemployment	5.5	7.3	5.7	4.6	4.1
	levels in 2040				
Public spending as % GDP	42	51	47	38	36

4.1 Population

Population growth declines in all scenarios compared to the average for the period 1971-2001 (see De Jong and Hilderink (2004)). The baby-boom generation gets older and the mortality rate rises in all scenarios. The differences between the scenarios are mostly due to differences in migration and fertility. In *Regional Communities*, population growth is initially still positive, but after 2010 the population declines. In 2040 about the same number of people live in the Netherlands as in 2000. The decline in the population after 2010 is the result of a restrictive

immigration policy and a low birth rate. In *Strong Europe*, population growth is higher—mostly because of a less austere immigration policy and a high birth rate. Immigration policy in *Transatlantic Market* is stricter, and aims primarily at bringing in knowledge workers. In *Global Economy*, net immigration is high because of a relatively open immigration policy towards labour migrants in general. Because the birth rate is also high, population growth is highest in this scenario. The differences in growth figures cause a wide range in the size of the population across the scenarios, varying from 16 million inhabitants in 2040 in *Regional Communities* to almost 20 million in *Global Economy*.

4.2 Labour supply, employment and unemployment

The ageing of the population causes the labour supply to grow more slowly than the total population: an increasing share of the population is thus retired.[1] The elderly dependency ratio, measured as the ratio of the number of people aged 65 years or older to the number of people 20-64 years old, increases from 22% now to 43% in *Global Economy* and to 46% in *Regional Communities*. The elderly dependency ratio rises less in *Global Economy* because of the relatively high birth rate. The differences in immigration between the scenarios do not lead to large differences in the elderly dependency ratio. The age structure of immigrants at entry deviates from that of the already present population (more young adults, fewer older people). The immigration is a gradual process, however, and over the course of the scenario period an increasing share of the immigrants reaches retirement age as well.

The effect of ageing is most visible in *Regional Communities*, where labour supply falls on average by half a percent per year because of the combination of stagnating population growth and an increase in the elderly dependency ratio. In the other scenarios, the increase in the elderly dependency ratio is partly offset by a rise in the participation rate, especially of people older than 50 years and of women. In *Global Economy*, the participation rate rises so much that the labour supply grows almost as fast as the population. In that scenario, the ratio between the number of people with and without jobs remains almost constant, so that the collective cost of ageing can to a large extent be covered by the growth of the tax and social premium base.

In the long run, unemployment is noticeably determined by the tax wedge (the difference between the total labour cost and the net wage) and the replacement rate (the ratio between social benefits and wages); see (Broer et al., 2000). In *Regional Communities*, the tax wedge and

[1] See Roodenburg and van Vuuren (2004) for an overview of the development of labour supply in the four scenarios.

the replacement rate both rise. Unemployment, therefore, also rises—to more than 7%. Unemployment is somewhat lower in *Strong Europe*, due to a modest reform of the welfare state. In *Transatlantic Market* and *Global Economy*, cutbacks in social benefits and lower tax rates lead to a low level of unemployment—a little above 4%. The low unemployment in the more market-oriented scenarios is in itself favourable. It is brought about by sober social benefits, however, and more generally, sober social services. Because of the differences in the development of unemployment, the growth of employment differs somewhat from the growth of the labour supply—although these differences are small in the long run.

4.3 Labour productivity

The central engine for the rise in labour productivity is technological progress, the important determinants of which are the incentives to innovate coming from the marketplace and the investments in human capital.[2] The market orientation in the *Transatlantic Market* and *Global Economy* scenarios therefore provides an important stimulus. In *Transatlantic Market*, the strong economic ties with the US cause an accelerated deployment of ICT, which raises productivity especially in the services sector. In *Global Economy*, success at the WTO leads to a rapid diffusion of knowledge, and thus also to extra creation of knowledge. In *Strong Europe*, the government provides high quality and affordable education for the entire population, which boosts labour productivity. In *Transatlantic Market* and *Global Economy*, higher education is partly privatised. A government-supported loan system, together with the stronger incentives resulting from the higher income inequality, keeps participation in higher education from dropping. The financial incentives may even lead to more purposeful study behaviour (Belot et al., 2004). On balance, the increase in labour productivity is highest in *Global Economy* and lowest in *Regional Communities*.

4.4 Economic growth

The growth rate of GDP equals, by definition, the sum of the growth rates of employment and labour productivity. Because the latter two growth rates are positively correlated in the scenarios, the range in GDP growth is substantial. For a proper evaluation of prosperity in the different scenarios, however, the growth of GDP per capita is a better yardstick. Using that measure, the

[2] Smid (2005) puts the growth of labour productivity in the Netherlands in a historical and international perspective.

differences are less pronounced, but still considerable. *Global Economy* exhibits the highest growth of prosperity. In *Regional Communities*, the growth is low because of the combined effects of ageing and a slow increase in labour productivity. But also in this scenario GDP per capita keeps rising.

Table 4.2 Labour productivity and GDP in levels

			Regional Communities	Strong Europe	Transatlantic Market	Global Economy
	1971	2001	2040	2040	2040	2040
	index, 2001 = 100					
Labour productivity	58	100	160	179	209	224
GDP	47	100	132	184	209	272
GDP per capita	57	100	133	156	195	221

The differences in economic growth are made even more visible, perhaps, by examination of the levels of labour productivity, GDP, and GDP per capita in 2040; see Table 4.2. In *Global Economy*, for example, GDP per capita more than doubles. In terms of GDP, *Strong Europe* and *Transatlantic Market* take up a middle position. GDP growth is based relatively strongly on population growth in *Strong Europe* and on labour productivity growth in *Transatlantic Market*. The differences in GDP per capita between these two scenarios are therefore larger than those in GDP. In *Regional Communities*, GDP per capita also rises. The rise in labour productivity of 1.2% per year leads to a cumulative increase of 60% in 2040. Although about half of that is needed to offset the effects of ageing, more than 30% still remains for an increase of income per capita.

How does the Netherlands fare compared to the rest of Europe? The key uncertainties that must be dealt with in the Netherlands are also relevant at the European level. The Netherlands has little influence on the degree of international cooperation and follows European and international developments. This study therefore assumes that the Netherlands makes the same choices as the rest of Europe with respect to the reform of the public sector. The comparison to Europe is in this study limited to the EU-15. The new member states still have, on average, much lower levels of GDP and productivity. If the levels of labour productivity in the accession countries converge to those of the EU-15, economic growth in these countries will be higher than in the EU-15.

Compared to the European average, the Dutch population is and will remain somewhat younger. As a result, the growth of the Dutch population of working age may be somewhat higher than the European average. The relatively low elderly dependency ratio in the Netherlands may also lead to lower tax and social security premiums, which encourages labour participation and reduces unemployment. On the other hand, the current European unemployment rate is on average higher than the corresponding rate in the Netherlands. Other countries thus have a larger labour reserve, which could lead to somewhat higher employment growth in those countries. The effects are not large, however, and work in opposite directions. On balance, Dutch employment growth in the scenarios for the Netherlands is about the same as European employment growth in the scenarios for Europe (see Lejour (2003)).

The level of Dutch labour productivity per hour is high from an international perspective (see Table 4.3). Value added per hour in the Netherlands is almost 5% higher than in the United States, and 15% higher than the EU-15 average. Should these productivity levels converge, the growth rate in the Netherlands would be lower than in the EU-15. Convergence will not necessarily take place, however. Indeed, relative labour productivity levels between the Netherlands and the EU-15 have remained almost constant over the previous 30 years. Lower tax and social premium rates made possible by the lower elderly dependency ratio may also stimulate labour productivity growth in the Netherlands compared to the EU-15. Moreover, if the relatively high number of unemployed people in the EU-15 also have relatively low skills (on average), convergence in unemployment rates may lead to a lower average labour productivity growth rate in the EU-15. Based on these arguments, the growth of labour productivity in the Netherlands could be below or above the EU-15 average. An assumption in the scenarios is thus that labour productivity growth in the Netherlands is equal to the EU-15 average.

Table 4.3 GDP per hour worked in purchasing power parities, US=100[a]

	1970	2000
The Netherlands	74.8	104.9
EU-15	64.8	90.7
United States	100.0	100.0

[a] Source: Sapir et al. (2004)

In the scenarios for the Netherlands, therefore, both determinants of economic growth (the growth of employment and of labour productivity) are about the same as those in the European

scenarios. GDP growth in each scenario is thus also similar in both sets of scenarios. At the outset, therefore, no clear indications suggest whether the Netherlands will do better or worse at the macroeconomic level than the other countries in the EU-15.

5 Sectoral developments

What determines the development of industries in the long run? An important role is certainly played by the rise in labour productivity. In the long run, such an increase causes a proportional decrease in labour cost per unit of production. The (relative) reduction in price leads to a rise in demand. Demand also rises as a result of the general rise in prosperity. Another important factor is the development of domestic costs relative to the cost of producing abroad. If an industry is hit with competition from countries with much lower costs, domestic production will stagnate because domestic firms will shift production abroad or disappear altogether.

It is not clear at the outset which of these factors dominates. Industries with rapid growth of labour productivity will not necessarily also experience high growth of production and employment, for instance. Table 5.1 presents the growth rates of labour productivity in a number of aggregated sectors of the economy. The sector with the highest growth of labour productivity (for decades, now) is agriculture. From a historical point of view, food is indeed inexpensive, readily available and safe. Yet, agriculture is a declining sector. How can this be? Demand for agricultural products is not very sensitive to the prices of these products. The decline in prices has thus not led to a strong increase in demand. In addition, agriculture in general has not benefited much from the general rise in prosperity. Agricultural products mainly fill a basic need. Therefore, the sharp rise in labour productivity did not go hand-in-hand with a proportional increase in demand. As a result, employment in agriculture steadily declined.

Table 5.1 Growth rates of labour productivity by sector

	1980–2001	Regional Communities 2002–2040	Strong Europe 2002–2040	Transatlantic Market 2002–2040	Global Economy 2002–2040
	changes per year in %				
Agriculture	3.6	2.6	2.7	3.0	3.8
Manufacturing	2.9	2.1	2.7	2.8	3.4
Services	1.1	1.4	1.8	2.4	2.5
Health care	− 0.3	0.5	0.6	0.7	1.0
Government	1.2	0.6	1.0	1.2	1.5
Total economy	1.3	1.2	1.5	1.9	2.1

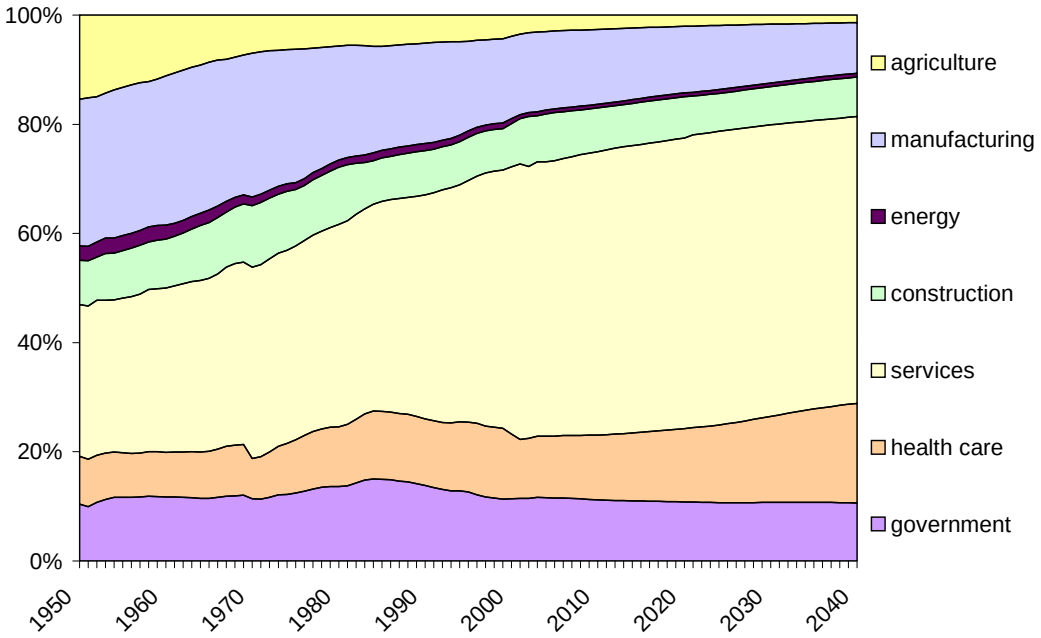
The health care sector is at the other end of the spectrum, and exhibits relatively low labour productivity growth.[3] Many tasks in the care sector are difficult to automate. Still, health care is a high growth industry. Although slow labour productivity has led to relatively high prices, demand has not slowed down. Also here, demand is fairly insensitive to the price, and high prices did not hinder demand greatly. On the other hand, increases in prosperity and in technological possibilities did spur a rapid increase in demand. Another factor increasing demand in the future is the ageing of the population. Demand in the health care sector, therefore, rises much faster than labour productivity, so that employment expands strongly.

Productivity in manufacturing, as in agriculture, has been relatively high, resulting in a strong decline of prices. Unlike in agriculture, however, the decline in prices and the growth in general prosperity greatly stimulated demand for manufactured goods. ICT products are a spectacular example. Productivity and demand, measured in units of capacity, grew manifold. Yet, demand has not completely kept up with labour productivity growth in manufacturing, resulting in steady de-industrialisation. In addition, parts of manufacturing face heavy foreign competition from low-wage countries. Some manufacturing industries have largely disappeared from the Netherlands. This process has been going on for decades and is expected to continue in the future. This does not imply, however, that manufacturing will disappear from the Netherlands altogether. The Dutch manufacturing sector is comprised of many firms producing high-quality intermediate goods. These (for the most part) relatively small companies function superbly in niche markets.

The real job engine in the Netherlands is the commercial services sector. The dominant factor here is the steady growth of prosperity, which stimulates demand for services. Traditionally, the services sector has always had a low productivity growth rate, because many services were characterised by personal interaction and were difficult to automate (consider the hairdresser as the standard example). The services sector covers a steadily broadening range of markets, however, with the focus increasingly on transporting and processing information. Examples include Internet, telecom, banking, insurance and logistics. In these areas, large productivity gains are possible by implementing ICT applications. Another factor influencing the commercial services sector: direct personal contact between producer and consumer is becoming less important, which makes it possible to produce at a distance. International trade and competition have thus become increasingly important factors in the sector, which is

[3] Bos et al. (2004) describe the developments of the health care sector and the public sector in the scenarios in more detail.

Figure 5.1 Shares in employment, Transatlantic Market



currently the fastest growing component of Dutch exports. All of this makes the distinction between manufacturing and services steadily less relevant. On the one hand, the manufacturing sector is shifting from the large-scale production of physical goods to areas like R&D, design, marketing and intermediate products. On the other hand, the services sector is moving towards products that have a large knowledge component and can be traded internationally.

The interaction between supply and demand factors has, on balance, led to a sizeable shift in the employment shares of the different industrial sectors. Figure 5.1 shows these shares for the *Transatlantic Market* scenario. The other scenarios show quite similar pictures. In order to put the development in a historical perspective, the figure shows the developments from 1950 till 2040. The declining share of employment in agriculture and manufacturing is clearly visible, as is the rising share in the services and health care sectors.

Most remarkable is that this shift in employment shares in the period 1950-2040 is a continuous process, with most of the shift having already taken place (particularly in the 1970s). The figure sheds an interesting light on the question whether prosperity can still rise when increasing competition leads to outsourcing of activities abroad and to loss of employment in certain sectors, such as manufacturing. Economic theory, optimistic about this issue, predicts that international trade will lead to shifts in production and employment shares that will increase

prosperity in the long run—even though the adjustment process may initially be painful. The historical development in the Netherlands supports this view. The large shifts in employment shares over the past decades have gone hand-in-hand with a dramatic rise in prosperity.

6 Conclusions

The scenarios described above sketch consistent pictures of possible economic developments in the Netherlands. Many variables have a wide range of outcomes across the scenarios, which is most striking when looking at the outcomes in levels for 2040. For instance, the level of GDP per capita in 2040 will be between 30% and 120% higher than the current level. Economic growth, however, is only one side of the coin. The scenarios with high growth also feature higher income inequality and pay less attention to cross-border environmental problems.

In the areas of population and employment, ageing plays a central role in all scenarios. The elderly dependency ratio will roughly double. This will require a large increase in the transfers of the working to the not-working population. An increase in labour participation broadens the base for collecting taxes and social premiums, which can cover part of the collective costs of ageing. Higher participation is indeed possible, particularly of women and of people above 50 years of age. In one scenario, the increase in participation is so large that the effects of ageing are almost offset by the broadening of the base.

It is to be expected that the growth of the Dutch economy will on average be similar to that of the EU-15. In the scenarios for the Netherlands, both employment and labour productivity grow about as fast as in the scenarios for Europe.

The shares of employment across industrial sectors will continue to shift, particularly from agriculture and manufacturing to services and health care. This will require a large adjustment of the Dutch economy. This adjustment is not new, however; it is the continuation of a process that has been going on for decades and need not in any way hinder the continued growth of prosperity.

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Appendix A Tables

Tables

This appendix presents a number of tables. Tables A.1 through A.4 give the main macroeconomic results for the four scenarios. The results are presented for two periods; for 2001–2020 and 2021–2040. In general, economic growth is lower in the second period due to lower or negative growth of labour supply.

Tables A.5 and A.6 show the growthrates of the volume of value added and employment by industry. Tabel A.7 gives a description of the industries.

Regional Communities

Table A.1 Macroeconomic results Regional Communities

	1980–2001	2002–2020	2021–2040
	changes per year in %		
Prices			
Wages	3.0	2.8	3.3
Price private consumption	2.5	1.2	1.4
Price exports	0.5	1.1	1.2
Price value added (market prices)	2.2	1.2	1.7
Volumes			
Volume private consumption	1.9	1.4	0.8
Volume investments	2.5	− 0.6	− 0.8
Volume exports	5.4	1.5	0.8
o.w. goods	5.4	1.1	0.6
services	5.3	3.1	1.5
Volume imports	4.8	1.6	0.8
Volume gross domestic product (market prices)	2.5	1.0	0.4
o.w. manufacuring (excl. oil)	2.1	0.6	0.1
commercial services	3.4	1.4	0.7
Real net national income	2.3	1.0	0.5
Labour productivity	1.3	1.3	1.1
Employment (fte)	1.2	− 0.3	− 0.7
	levels endyear		
Labour supply (thousands)	7575	7473	6563
Unemployment (thousands)	251	535	503
Unemployment (% pnt)	3.3	7.2	7.7
Public spending (% GDP)	42	46	51

Strong Europe

Table A.2 Macroeconomic results Strong Europe

	1980–2001	2002–2020	2021–2040
	changes per year in %		
Prices			
Wages	3.0	3.3	3.7
Price private consumption	2.5	1.1	1.4
Price exports	0.5	0.9	1.1
Price value added (market prices)	2.2	1.4	1.9
Volumes			
Volume private consumption	1.9	2.2	1.9
Volume investments	2.5	0.8	0.7
Volume exports	5.4	3.1	2.2
o.w. goods	5.4	2.8	2.2
services	5.3	4.1	2.5
Volume imports	4.8	3.2	2.6
Volume gross domestic product (market prices)	2.5	1.8	1.4
o.w. manufacuring (excl. oil)	2.1	1.7	0.8
commercial services	3.4	2.2	1.6
Real net national income	2.3	2.0	1.7
Labour productivity	1.3	1.6	1.4
Employment (fte)	1.2	0.2	− 0.1
	levels endyear		
Labour supply (thousands)	7575	8059	7895
Unemployment (thousands)	251	518	434
Unemployment (% pnt)	3.3	6.4	5.5
Public spending (% GDP)	42	44	47

Transatlantic Market

Table A.3 Macroeconomic results Transatlantic Market

	1980–2001	2002–2020	2021–2040
	changes per year in %		
Prices			
Wages	3.0	2.8	3.6
Price private consumption	2.5	0.7	1.2
Price exports	0.5	0.6	0.9
Price value added (market prices)	2.2	0.8	1.4
Volumes			
Volume private consumption	1.9	2.7	2.2
Volume investments	2.5	1.1	1.1
Volume exports	5.4	3.4	2.3
o.w. goods	5.4	2.8	1.8
services	5.3	5.6	3.4
Volume imports	4.8	3.3	2.4
Volume gross domestic product (market prices)	2.5	2.2	1.6
o.w. manufacuring (excl. oil)	2.1	2.1	1.0
commercial services	3.4	2.9	2.0
Real net national income	2.3	2.2	1.8
Labour productivity	1.3	1.9	1.9
Employment (fte)	1.2	0.3	− 0.3
	levels endyear		
Labour supply (thousands)	7575	8110	7552
Unemployment (thousands)	251	402	357
Unemployment (% pnt)	3.3	5.0	4.7
Public spending (% GDP)	42	40	38

Global Economy

Table A.4 Macroeconomic results Global Economy

	1980–2001	2002–2020	2021–2040
	changes per year in %		
Prices			
Wages	3.0	3.6	4.3
Price private consumption	2.5	0.9	1.3
Price exports	0.5	0.5	0.7
Price value added (market prices)	2.2	1.1	1.7
Volumes			
Volume private consumption	1.9	3.4	3.0
Volume investments	2.5	2.7	2.1
Volume exports	5.4	4.6	3.4
o.w. goods	5.4	4.1	3.3
services	5.3	6.3	3.7
Volume imports	4.8	4.8	3.7
Volume gross domestic product (market prices)	2.5	2.9	2.3
o.w. manufacuring (excl. oil)	2.1	2.3	1.7
commercial services	3.4	3.5	2.6
Real net national income	2.3	3.1	2.6
Labour productivity	1.3	2.1	2.1
Employment (fte)	1.2	0.7	0.2
	levels endyear		
Labour supply (thousands)	7575	8711	8992
Unemployment (thousands)	251	369	383
Unemployment (% pnt)	3.3	4.2	4.3
Public spending (% GDP)	42	37	36

Value added by industries

Table A.5 Volume value added by industries

	1980–2001	Regional Communities 2002–2040	Strong Europe 2002–2040	Transatlantic Market 2002–2040	Global Economy 2002–2040
	changes per year in %				
Volume value added					
Agriculture, hunting, forestry, fishing	3.0	0.1	0.2	0.6	1.6
Food, beverage and tobacco industry	2.1	0.4	1.2	1.3	3.1
Other manufacturing industries	1.1	0.3	0.9	1.2	0.8
Chemical and rubber industry	4.0	1.0	2.3	2.4	2.8
Metal industry	1.9	0.0	1.0	1.5	1.2
Petroleum industry	1.3	0.3	1.2	2.1	3.4
Mining and quarrying	− 0.5	− 3.1	− 2.4	− 2.5	− 2.2
Public utilities	0.5	0.2	1.5	1.5	2.1
Construction industry	0.6	− 0.7	0.4	0.6	2.0
Operation of real estate	2.9	0.5	0.8	0.9	1.4
Wholesale and retail trade and repair	3.1	1.1	2.5	2.4	3.4
Transport	3.6	1.9	2.3	3.4	5.2
Communication	6.4	2.7	3.6	6.2	6.4
Banking. finance and insurance	1.7	0.9	1.8	2.3	2.6
Temp. employment agencies, household serv.	7.2	0.3	1.2	1.8	1.5
Other commercial services	5.0	0.6	1.4	2.0	2.1
Medical and social services	1.8	1.2	2.0	2.1	2.9
Government services	1.5	0.8	1.5	0.9	1.5
Gross domestic product	2.5	0.7	1.6	1.9	2.6

Employment by industries

Table A.6 Growth of employment by industries

	1980–2001	Regional Communities 2002–2040	Strong Europe 2002–2040	Transatlantic Market 2002–2040	Global Economy 2002–2040
	changes per year in %				
Employment (fte)					
Agriculture, hunting, forestry, fishing	− 0.6	− 2.5	− 2.5	− 2.4	− 2.1
Food, beverage and tobacco industry	− 1.0	− 1.6	− 0.8	− 0.5	0.6
Other manufacturing industries	− 0.8	− 1.4	− 0.9	− 0.7	− 1.5
Chemical and rubber industry	− 0.4	− 1.6	− 1.3	− 1.5	− 1.6
Metal industry	− 0.7	− 2.1	− 2.2	− 2.1	− 2.4
Petroleum industry	− 0.6	− 1.0	− 1.4	0.7	0.9
Mining and quarrying	− 0.1	− 4.4	− 4.2	− 4.3	− 4.4
Public utilities	− 1.2	− 0.1	0.3	0.1	0.8
Construction industry	− 0.3	− 2.0	− 0.4	− 0.4	0.9
Operation of real estate	2.2	− 0.8	0.3	0.0	1.0
Wholesale and retail trade and repair	1.3	− 0.4	0.2	0.4	0.6
Transport	1.0	− 0.4	− 0.1	− 0.3	1.0
Communication	1.8	0.4	0.5	0.5	1.7
Banking. finance and insurance	1.7	− 0.4	0.2	0.1	0.5
Temp. employment agencies, household serv.	5.1	− 0.5	− 0.2	− 0.2	0.1
Other commercial services	4.2	− 0.5	0.1	− 0.2	0.2
Medical and social services	2.1	0.6	1.3	1.3	1.8
Government services	0.3	0.2	0.4	− 0.2	0.0
Total economy	1.1	− 0.5	0.1	0.0	0.4

Classification of industries

Table A.7 Classification of sectors and industries

Agriculture	Agriculture, hunting, forestry, fishing
Manufacturing	Food, beverage and tobacco industry
	Other manufacturing industries
	Chemical and rubber industry
	Metal industry
Energy	Petroleum industry
	Mining and quarrying
	Public utilities
Construction	Construction industry
Services	Operation of real estate
	Wholesale and retail trade and repair
	Transport
	Communication
	Banking, finance and insurance
	Temporary employment agencies and household services
	Other commercial services
Health care	Medical and social services
Government	Government services