



# **Water and Wealth**

## **A brief economic history of the Netherlands**

**Dirk Bol**

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Map of the Netherlands



## Preface

The book on *Water and Wealth: A Brief Economic History of the Netherlands* has provided a very fascinating account of the path to development of Holland. The book is timely because it comes out at the period when development thinkers and practitioners are frustrated with the so called slow pace of economic transformation in poor countries. By taking the reader step by step through the economic history of a successful economy, Dirk Bol manages to raise useful lessons for the poor and small economies. Here I raise only five of them.

Firstly, sustainable economic transformation is a complex process that takes a long time to be achieved. This process is also characterized by periods of ups and downs. In Holland the process that started around year 1000 was still ongoing during the last century. Secondly, there must be a reason for change; a specific problem to solve. In Holland as early as year 1000 the need to protect against excessive floods and for land reclamation rallied all actors and resources behind a common goal. In the same way energy was the common binding constraint for the UK when wood became scarce during the early years of the Industrial revolution. In the words of Dirk Bol '(I)nnovateness is not high when the necessity for change is not there.'

Thirdly, addressing poverty and inequality, both inter and intra is a continuing development challenge. Not all regions of Holland gained from economic transformation during the 17<sup>th</sup> century; in particular the eastern and southern parts of the country participated much less in the process of change. Fourthly, the role of actors and institutional framework in the process of transformation was not static; it was shaped by specific socio-economic environments of the time. Already as early as year 1000 the church, landlords and the merchants played an active role in land reclamation and institutional setups (social structures) were created to facilitate this process. But generally, different from the UK, the Dutch State played less developmental function, preferring a market facilitated economy mainly due to trade orientation of its economy. Fifthly and lastly, for small and poor economies external markets and demand factors are key drivers of change. These economies have more to gain from an open global regime that also offers learning opportunities than a closed one.

The issues raised in the book are not new in development thinking. However, it seems that during the past few years partly due to the urgency for addressing poverty and inequality we have overlooked the lessons provided by history. There is now growing frustrations that countries that became independent in the late 1950s and 1960s are still poor in spite of generous aid flows, the focus on social sectors to promote capacity for economic growth and poverty reduction (even at the neglect of economic infrastructure and the productive activities) and there is a tendency to overlook the critical role of all actors in development, in particular the state as a development agency. The book should provide an opportunity for scholars, policy makers and development partners to revisit their development thinking.

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## Introduction

Once there was Ice. And before that there was tundra, and before that forest, savanna, desert and sea. The landscape constantly changed, adapting itself to climate change and other external factors. The prevailing animals adapted themselves to the landscape as well: elephants, monkeys, reindeer etc. Occasionally some mobile hunters and gatherers passed, at least since 250,000 BC from which the oldest human traces date.

Human settlements only started long after the ice melted, from 13.000 BC onwards, when it became warmer and the North Sea level started to rise. Wandering nomads settled down from then onwards, and the first houses were found in the south of the Netherlands, Limburg (*see map*), dating from around 5,000 BC. Limburg was situated a bit higher than the rest of the country, with loss soils, so that some farming (barley and oats) was possible. The builders of the megalithic tombs (*hunebed*) brought cultivation above the rivers, up to Drente. Sandy soils (diluvial) with some elevation were found in the East and South, with alluvial clays and peat soils in the West and North. The peat bogs were a result of sea inundations, poorly drained moors with decaying plants.

People in the regularly flooded swampy delta of the Scheldt, Maas and Rhine rivers along the North Sea coast could only live on small refuge mounds, called *terpen*, and they lived from fishing. Exposure to the sea (and river) floods remained high until dunes started to offer some protection from the sea, from 1000 BC onwards. And even though the tides and rivers became less active as the years went by, the permanent struggle against water became a lasting characteristic of the Dutch way of life. Paradoxically, the challenges this created turned out to become a sure way to wealth.

When the Romans came, around 50 BC, and the written history of the Low Countries - the Netherlands and Belgium - started, the constant changing of the tides kept them wondering how people could live on land that becomes water twice a day. Was this land or sea?

By that time some mixed farming had been introduced in parts of the area, the animals (cows, sheep, horses) contributing to some agricultural improvements with their manure, which allowed for a larger population on the same land. Draught animals were to become important, as in the rest of Europe. Some early technological innovations also helped. After the discovery of the flint came axes, spears, arrows, bows, pottery, ploughs, wheels, carts and some metal works (iron, copper, gold, silver, tin) and arms.

The earliest estimate of a thousand people shows a very thinly populated area around 10,000 BC, but at the time of the Roman arrival this had already increased to 100,000. These people were from different Celtic and Germanic tribes, Frisians, Batavians, Cananefates, and others that disappeared from history after being killed in the struggle against the Roman invaders or taken away as slaves. Most of them were small tenants, working the land of more powerful people, with a few free peasants and slaves.

With the Romans came trade in grains, wine, oils, iron, ceramics and bronze, even though small local markets and money exchange existed before. This was especially true in the earlier inhabited Southern parts (now Belgium), which also had some cottage industries (textiles), salt mining, processing of iron, blacksmith, weapons, kettles, jewelry, ceramics and glass making.

The expansion of markets and roads by the Romans gave an impulse to the local economy, and its location near main rivers and the sea became a strong point of this North-West corner of Europe, a good meeting place, transfer and transit point.

But the northern parts above the major rivers (Rhine, Maas, IJssel) had little Roman influence and were largely left by themselves, which suited the independent and entrepreneurial Frisians just fine. The broad rivers, marshes, peat bogs and lakes were not inviting to outsiders.

Only when the Franks came, after the Roman defeat around 400 AD by German and other semi-nomadic pastoralists, did the northern parts become more connected with the southern ones and the rest of Europe. Its location became even more attractive with the arrival of Christianity and the gradual movement of Christian Europe's borders towards the East. While the southern parts continued to be much influenced by French lords and kings, the Carolingians, the North became more exposed to German political and economic influences. The Netherlands even became a formal part of Germany in the 10<sup>th</sup> century, which lasted until its formal liberation from Spain in 1648.

With the demise of the Roman Empire, the role of central authorities declined and local landlords and counts became master of their own territory again, with only some alignment and submission to larger units and kings, and an increasingly important role of the Church. Trade and other non-agricultural activities suffered a lot from the disappearance of the unifying empire, and therefore towns also, and by 800 most of Western Europe had returned to an agrarian society. Feudal lords, kings, other nobility and the Church owned the land, with very large holdings, to which common people were attached as serfs, with many obligations and some rights.

But this institutional framework did not reach everywhere in Europe in uniform ways, and the northern parts of the Low Countries, especially the swampy delta and Coastal zones, were not much affected by this feudalism. The Friesians even continued their early commercial activities, trading cattle, ceramics, glass, stones, wine, swords, cloth and even slaves, until the invading Vikings temporarily halted this during the ninth century.

This was the situation at the turn of the millennium. When the world did not end as had been widely predicted, the Dutch started to engage in activities that gradually transformed the landscape and society, laying the foundations for an economic empire that was to flourish six centuries later. As the famous French philosopher Descartes -residing in Holland – was later to say: ‘God made the world, but the Dutch made Holland.’

How this tiny and swampy delta, a narrow coastal strip of not more than 15,000 square km, with large parts below sea level, came to rule the seas, will be explained in subsequent chapters. The early phase, the preparation for take-off during the 16<sup>th</sup> century, will receive much attention. After the Golden Age in the 17<sup>th</sup> century came a certain stagnation, and even decline, until a late Industrial revolution occurred after 1850. Those ups and downs will also be dealt with, culminating in the present situation.

# 1 The Beginning

## *Dikes*

It all began with the dikes. Early protection against floods from the sea and rivers started around the year 1000, first in Flanders (now Belgium) and then in Holland and Friesland, the Coastal part of the Netherlands (*see map*). It was a combination of natural and social forces, a more relaxed water regime allowing for the construction of small earthen dikes and dams by the people themselves. Some agricultural improvements and increased land values probably made this construction also feasible now. And when the county of Holland was formed (and the name appeared for the first time), after withdrawal from the diocese of Utrecht but within the German empire, the count as formal owner of the empty land designed policies to start controlling the water and reclaiming land on a larger scale. Landlords, the Church and later some merchants were also involved in financing reclamation works. Windmills were introduced in the late 12<sup>th</sup> century to assist in the process of drainage, and gradually improved. A non-feudal social environment was relatively friendly towards technical innovations.

After the first settlements behind sea dikes on the sandy soils at the foot of the raised and renewed dunes (*geestgronden*) and on the higher river banks of the Rhine, Maas, Scheldt and IJssel, the typical Dutch landscape evolved through digging parallel ditches at similar intervals for drainage and lowering the level of the groundwater. This created strips of land perpendicular on dikes and roads, with the same width but differing length. Each new settler got access to 15-30 ha and vast tracts of peat bog soil covering much of Holland, Utrecht and Friesland were colonized in this way. Its technique of land reclamation was so popular that already around 1100 the Dutch started to export this 'polder model' to Germany, where the frontier between forest and arable land started to be pushed eastwards all the way to Siberia.

During the 12<sup>th</sup> century half of the formerly wasted areas was already occupied and (partly) cultivated, a process which was completed during the next century.

Many of the construction workers settled on the new lands as peasants. The church played an active role in this reclamation and received 1/10 of harvest in return. The counts felt strengthened by the army of new settlers, taxing these fairly independent inhabitants mildly. Holland learned from its southern neighbours, Flanders and Brabant, how to set up a proper administration, in cooperation with the nobility and respecting to some extent the interests of the farmers.

New social structures had to be created in the absence of the typical semi-feudalistic manorial relationships so present elsewhere, especially when the scale of reclamation increased. Water (drainage) boards were set up to build and supervise dikes, dams and ditches, with representatives from the count (bailiff) and the people, and these relatively autonomous bodies became quite powerful, with a coordinating body at regional level: the high drainage board. They reflected a sense of freedom inherent in the new settlers, but accomplished the necessary degree of cooperation amongst relatively individualistic members. This subtle balance between autonomy and cooperation could later be found everywhere in Dutch society, proof of how the struggle against water shaped its character.

Cooperation amongst Dutch peasants with clear rights and duties did not go beyond the water control, and the typical communal organizations that sprang up everywhere else, the so-called *markgenootschappen*, also in the eastern parts of the Netherlands, did not take off in Holland. New villages also remained fairly autonomous. The more northern Friesians had always been independent sailors and cattle traders, but with a lot of internal strife. Some individualism also developed early in Holland.

And so the swampy sponge Holland found some unity around 1300, also when polders were joined and rivers, canals, bridges and roads improved, and the first towns started to take shape. While some small towns had existed in the eastern and southern parts of the Netherlands, Dordrecht - a former *terp* - was the first *Dutch* town, i.e. in the county Holland, deriving its status and wealth from toll and staple rights. Passing ships had to transfer its goods at their staple market, well located at the crossing of three important rivers, connecting the Rhine hinterland with Flanders, as well as sea and river trade.

Other towns followed soon, Haarlem, Alkmaar and Delft (*see map*), and counts were eager to provide formal municipal rights in exchange for some of the toll revenue. Once again, a subtle balance of power emerged, with respect for the relatively independent towns, which were allowed some freedom in setting their own (economic) rules.

Land reclamation in Holland and elsewhere had also been induced by economic forces, as many parts of Western Europe showed signs of revival early in the new millennium. Population started to grow again after a long stagnation, probably as a result of the availability of more food because of technical innovations in agriculture, some climate and social change. New iron ploughs were introduced, the use of horses for animal traction improved, cloisters promoted new farming techniques, new crop rotation systems led to less fallow land (once every three instead of two years), and the land expansion and new settlements caused new dynamics. Grain yields increased and this higher land productivity liberated some peasants to look for work outside agriculture, such as trade, industries and the army. This and expanded land area induced investment in agriculture, and thus also land reclamation and other improvements.

The growth of towns and trade gradually weakened the existing land tenure system. Money became an important means of exchange, as trade and towns started to separate agrarian production from consumption. Where subsistence farming dominated before, peasants eating their own food with some deliveries to landlords, nobility and the church, production for an anonymous market in towns now became an opportunity. Prices appeared as important economic and social parameters, especially those of grains and other foods, and from then on agricultural prices were to dominate social and economic relations until the Industrial Revolution in the 19<sup>th</sup> century.

With the monetization of the economy came a slow change in duties and rights of peasants and serfs as well, with a gradual shift from obligations in kind (services, produce, forced labour, legal duties) to land lease in cash. Free serfs moved to the new land settlements or to towns, where they joined the labour reserve. Buying off that status had always been possible and was now increasingly done by younger sons and daughters, those without a place on the land of the lord.

The complete breakdown of feudalism took longer and was very complicated, with resistance by vested interests, landlords and the Church. Its details are not relevant here, as this was not really an issue in Holland. But it did exist in the eastern and southern parts of the Netherlands, and continued to do so for a long time. And its gradual breakdown in the areas surrounding Holland influenced its external economic environment and thereby its own development.

### *Trade and Towns*

One of the key changes that took place and contributed to the social and economic changes mentioned before was a gradual growth of international trade, starting in the major Italian towns of Venice and Florence after the crusades and the subsequent decline of Arab influences. A new landless class of merchants started to take the lead in European developments, replacing the landed aristocracy. These merchants benefited from annual fairs that were organized to boost trade, and they became the first bankers by extending letters of credit. The prohibition on interest charges by the Church was subtly avoided, through exchange rate manipulations, and money transfers were facilitated much in comparison to the cumbersome payments in gold and silver. Jewish traders had no problems with interest. Monetization, trade and transport, seafaring in particular, boosted Europe's economy.

In Holland there was little resistance by old social structures and vested interests to make relatively free use of land and labour for economic purposes and so developing a market economy, even though this was also a slow process here. Of course there was social stratification, also in the countryside, with large and small land owners. Most peasants were tenants, cultivating other people's land, but they were not necessarily worse off than land owning ones, as much depended on the location, quality of the land and the person, and of the terms of the lease and other duties and rights.

When an economic depression hit Europe again, early in the 14<sup>th</sup> century, and grain prices collapsed, Holland was but little affected. Its economy had hardly begun to develop, even though there was some participation in the flourishing European trade in salt, fish and cloth. But there were no large towns yet nor industries, contrary to its southern neighbour Flanders which therefore got hurt.

An important cloth industry had grown up in Flanders since Roman times, from on-farm wool weaving by women to a large urban industry with much labour division and specialization in washing, combing, spinning, weaving and painting. A new Chinese technology, horizontal looms with pedals, had gotten the men interested after 1100 and the import of high-quality wool from England also stimulated production, innovation and differentiation. Various towns had sprung up as a result of this scale enlargement and, like Northern-Italy, Flanders became one of the earliest urbanized areas in Europe. Many different types of heavy and light, cheap and expensive woolen and linen cloth were exported all over Europe. Brabant and Friesian cloth trade also grew a bit in those days. Merchants heavily influenced this production and trade with their large scale international involvement, including their Hanseatic or Baltic trade, the political and commercial league of Germanic towns (Lubeck, Dantzig) near the Baltic (East) Sea. Towns in the eastern parts of the Netherlands, Kampen, Tiel and Deventer) participated in this Baltic trade.

Apart from the depression, Flanders also suffered from the English-French war (1350-1450) in which it participated as part of France, and from guild conflicts – to stop modernization (like the spinning wheel) - and urban revolts, and from some protection of the infant cloth industry in England. Other wars and peasant revolts were also to affect some regions, but not Holland.

Things got worse when a bubonic (and lung) plague from India hit Europe in 1348 via Italy, the so-called Black Death, wiping out complete villages, depressing agriculture and industry and killing as much as one third of Europe's population within three years. This drastic population shrinking contributed to much social and political upheaval afterwards, leading to the end of the Middle Ages and of feudal society, and was to depress the European economy until the 16<sup>th</sup> century.

Holland was not so much affected. Its economy was still very small, it suffered less from malnutrition than elsewhere because of smaller population and better diet (fish, dairy), and somehow it could take advantage from the decline of its neighbours (Flanders). A hesitant diversification became visible after 1350.

Agriculture benefited from new farming systems, whereby the period of fallow land was pushed back from three to five years, new crop rotation between summer and winter crops (grains) emerged and cattle farming developed, with manure, fodder crops and grass helping the intensification of arable land use. As more (cheap) grains became imported (from Poland) through the Baltic trade, Holland could start to commercialize its agriculture by introducing cash crops for the market: Cole-seed and rape-seed (for soap and lamp oil), hemp-seed (for rope and nets), turnip, madder (for cloth paint), flax (for linen) and hop (for beer). This was a very courageous move, to rely at least partly on the market for food instead of growing it all locally. Still, most food continued to be grown at home.

This market orientation was not much hindered by medieval social structures as elsewhere, although just at this time Dutch nobility started its mutual power struggle that was to last for more than a century (*Hooks and Cod-Fish quarrels*). Still, wage labour soon became a fairly normal phenomenon, although landlessness was not always accepted without a fight. Many peasants in the Coastal areas had to accept other jobs on the side, as their land was not productive enough: work on other people's land, fishing, peat digging or ditches, dike and drainage maintenance, road and river transport, hunting birds or spinning. Logically there were winners and losers on the new lands, as a result of large differences in the quality of land and of farm management. Land rents differed much accordingly, up to 40 times per unit.

A new staple market for Dutch peasants in Antwerp (since 1358) and a good livestock market in Flanders helped developments, as well as the growth of towns and non-agricultural activities in Holland itself. By 1400 almost 30% of its growing population of 200.000 people was already living in towns, fuelled by migration from rural areas and from elsewhere. Dordrecht was still the most important city, but Leiden, Haarlem and Delft grew faster. Some clothing industries emerged, with the assistance of shippers bringing in some of the Flemish cloth they were trading, and with new techniques learnt from Flanders and Brabant. Woolen from sheep and linen from flax became the basic material. A beer industry started to flourish thanks to the hop and the brewing techniques borrowed from Flanders and elsewhere. The Dutch became perfect imitators, also taking over herring

conservation from the Hanze towns in Northern Germany, as well as some general entrepreneurial spirit from all of their trading partners. The rationality necessary to control the water and to carefully balance goals and means also served them well.

Internal river shipping developed with the growth of urban industries and agricultural surplus, but was soon taken over by sea going trade. Deft fishermen from Zeeland – the Scheldt delta in between Holland and Flanders - were the first to cross the seas, bringing grains from the Baltics and carrying Dutch butter, cheese, beer, herring, salt and the first fruits and vegetables to England and elsewhere, like cabbage, onion and garlic. Cheap shipbuilding and low wages of migrant sailors from everywhere fuelled this trade, with herring fishing and its carrying trade flourishing most, especially after breaking a German monopoly from the Hanseatic League.

Courage and a keen eye on economic opportunities led the way, with an early understanding of the important role of market demand factors. A gradual shift of power from South to Northern Europe, from the Mediterranean to Atlantic and North Seas, provided an encouraging environment.

Peat digging became an important rural industry, an abundant and cheap energy source from the reclaimed swampy bogs, allowing energy-intensive industries like bricks, tile, beer and sugar to grow and leading to many new channels, sluices, bridges and other waterworks to transport the peat. But this also contributed to serious problems, like rabbits in the dunes, adding to the natural subsidence of drained lands and threatening agriculture in general and grain production in particular on too moist soils.

On top of this came new floods and inundations caused by rising sea and river levels, and by neglect of (earthen) dike maintenance and of systematic drainage that had somehow crept in. Much land was lost again, especially in 1421 when the flood on Elisabeth Day killed 50.000 people in the south of Holland near Dordrecht, drowning 34 villages. Only in the 16<sup>th</sup> century would this neglect of waterworks be seriously corrected.

These and other considerations led to a structural shift from cropping to cattle farming in Holland, a change that turned out to have major consequences for its subsequent development. Because not only would this keep the threatened commercialization process of the rural areas alive, creating a lasting comparative advantage for Dutch farming, its extensive nature was also to push out labour to towns, where a labour reserve would benefit growing industries, fishing and trade. Such a labour move only occurred much later elsewhere in Europe. The good livestock (meat and dairy) market in Flanders also made this structural shift possible.

The ever more important Baltic grain trade was to ensure that the Dutch had enough to eat, as a return to subsistence farming that had occurred elsewhere in Europe as a result of the depression, was no longer possible here. And that trade laid the foundation for the central staple market role that was to originate in Amsterdam, exchanging cloth, herring and dairy products for grains and timber. Once again, the paradoxical struggle against water with its threats and opportunities had led the way forward.

### *Non-Agriculture*

Of course, merchants and urban entrepreneurs had played their own role in benefiting from market opportunities and creating profitable non-agricultural activities, first for domestic markets mainly, later also for export. Contrary to feudal lords elsewhere, who were busy making war and politics, they could focus on their economic interests, with some separation between economic and political power. This focus obviously stimulated economic development, but was difficult enough, as in those days the costs of trading or doing business were still high amidst plenty insecurity. Yet, the cost of capital had declined much everywhere after the Black Death, from 12 to 5% interest – implicitly derived from the price of land - in the 15<sup>th</sup> century, stimulating investment and some substitution of labour for capital. Some forms of banking and credit started to occur as well, like the Bill of Exchange as a trade credit, facilitating international trade in particular.

Unique demographical factors also supported this shift towards urban activities, as contrary to the rest of Europe, the Dutch population – including parts of Zeeland, Friesland and Utrecht - continued to grow after the Black Death of 1350, and quite rapidly even during the 14<sup>th</sup> and 15<sup>th</sup> century. An adequate and regular food supply helped to reduce death rates. On top of a remarkable natural growth some modest seasonal and permanent migration from neighbouring regions, where no similar

economic developments were taking place, got going, including some workers and entrepreneurs from Flanders with valuable knowledge (textiles). Abundant labour kept wages low, which had risen elsewhere as a result of population stagnation, making Dutch goods competitive internationally, although grain prices were a bit higher than elsewhere.

As these developments continued some friction started to grow between towns and countryside, its mutual relationship having been a subtle balance until then, with urban demand acting as the engine for rural growth and diversification. Townsmen became interested into rural development, investing in land and creating some control over farmers through mortgage, interest and lease. Rich farmers also joined them in towns, exercising the same powers. But towns were also to frustrate rural industries, often under pressure from their artisan guilds, trying to keep a monopoly on industrial activities such as beer brewing and textiles, and forcing a country to bring its agricultural surplus to the town. Assistance was sought from the various central authorities that alternately were in charge of the Low Countries and influenced the rules of the game, including taxes. Towns had some leverage over ambitious counts, whom they funded through tax revenues in exchange for economic and political privileges. They got the right to run their own economic affairs and be consulted in political matters affecting them. But official regulations did not have much effect on rural areas, except that towns were able to pass part of their heavy tax burden on to countries through market fees and lower food prices.

Some political unification took place during the 15<sup>th</sup> century under the Burgundian and Habsburg dukes, and eventually under Spain, long after the last count of Holland had died (1299).

In 1477 the first autonomous political body was created, the States General, with some privileges for the States of Holland and Flanders, but still with much decentralization. A chancellor was appointed, with a court council, an auditor and provincial boards.

This marked the beginning of the Netherlands as some kind of meaningful unit, with noticeable cultural developments thereafter in arts and sciences and the popularization of the Dutch language also contributing to a Dutch identity. The monopoly of the Church in such matters declined and some internalization of religion led to a kinder God. Apparently, this one frowned less upon money making than his predecessor.

The role of nobility had suffered much from their internal conflicts. Only a few influential families were left, owning 10% of the land in Holland. The State of Holland hardly had any nobility or clergy representatives, consisting mainly of common citizens from towns, which remained in control and now also represented the countryside.

All these gradual changes led to a situation around 1500 whereby the western part of the Netherlands, Holland and its adjoining areas in Zeeland, Friesland and Utrecht, was ready for economic take-off. The eastern and southern parts had been little affected by these changes, their higher sandy soils having been friendlier to the environment than the dynamic lower soils in the west. This led to few changes in traditional, medieval agriculture and social structure, to little population pressure and less orientation on towns - which were there - or markets and trade, despite some connections with the west through some seasonal migration and through markets and prices, especially in the closest areas (Veluwe, Brabant). The whole of the Netherlands had a population of about one million, with another million in the southern part of the Low Countries, especially in Flanders and Brabant.

Around 1500 Holland was already quite commercialised, even the countryside, and urbanized, thanks to an early market orientation fuelled by its water struggle, the absence of feudalism and early trade and fishing adventures. Its land and labour could be used in a more economic way than elsewhere, not hindered by other social obligations. Over 40% of its population of 250.000 lived in towns, a doubling in one century. This was a unique situation in Europe, except for Flanders and Northern Italy before, only to be reached elsewhere during the Industrial Revolution in the 19<sup>th</sup> century. Its population density close to 40 per sq. km was also exceptional.

Of the 35 towns on this tiny piece of land five were close to 10,000 inhabitants: Dordrecht, Delft, Leiden, Haarlem and Amsterdam. The latter was growing fast, its merchants having taken control of the expanding Baltic trade, where Dutch ships now handled 60-70% of all volume. The staple market resulting from this laid the foundation for its future wealth, and even in 1500 its exports (value)

exceeded those of Dordrecht, the first Dutch city, nine times. England became also an important trading partner and domestic trade intensified.

Even the Dutch countryside started to look a bit modern around that time, with its partly commercialized agriculture, high number of animals, and many non-agricultural activities and busy trade and transport. A large number of sailors contributed to this as well. Around 40% of the land was owned by the peasants themselves, with large variations between areas, the rest belonging to the nobility (10%), the church (20%) and urban citizens (20%). The latter used this for own use, investment, speculation or leased it to peasants. Some of them had been rich peasants who had moved to towns and farmed out their land. Despite the equal start on once reclaimed plots, wealth differences amongst peasants were large, some leasing land to others, and a few owning much more cattle too.

About 20-30% of the rural people were really poor then, including landless workers, being exempted from any tax. Some of the diversification that had occurred, with many side activities, was purely out of necessity, to avoid the worst poverty. Therefore, despite the commercialization, i.e. production for a market, there was not yet much specialization, concentration on one or a few specific products or activities. And there was little unity amongst the peasants either, because of a remarkable individualism and because of limited presence of opposing classes, like nobility and clergy. That may help to explain the absence of peasant revolts in Holland, contrary to elsewhere, on top of an early developing countryside. There were mortgages and leases to take care of, but not the manorial or seigniorial obligations and services which elsewhere led to the surrender of one third of the (grain) harvest.

With low yields of only three times the sown seed, that left only a third of harvest for the producers themselves, making farming not a profitable enterprise in most of Europe during the Middle Ages. But in Holland, as well as in Flanders and parts of England, yield- seed ratios already reached four at an early stage, and even five for some grains like rye and more for some other crops. External demand had brought this about, as well as major land and infrastructural improvements.

In towns an average 30-40% of the people were poor, but with much variation over time due to the highly volatile grain prices, especially those of bread, and changing employment situations, requiring more or less casual labour. The share of wage going to bread could easily vary from 20 to 80% and this in fact determined the real value of a wage. Yet, surprisingly maybe, wage levels were relatively high at the end of the Middle Ages, partly as a result of depressed population growth after the Black Death.

Again, there was a vast wealth difference amongst townsmen too, as shown in Leiden around 1500: the 10% rich (merchants and industrialists) owned 70% of all assets, a 30% middle class 25%, leaving the remaining 60% of the people with only 4% of all wealth.

Remarkably, a type of nuclear family dominated Holland much earlier than elsewhere, even though some clans and extended families persisted, a phenomenon that would prevail elsewhere only after the Industrial revolution.



## 2 Take Off

### *Agrarian Revolution*

All that had started modestly before the year 1500 accelerated afterwards. It was the end of the Middle Ages, the discovery of new colonies, and with the Renaissance came a new optimism: 'The tide is turning, the tone of life is about to change....and a fresh wind starts blowing' (Huizinga).

Holland benefited from an economic revival in Europe as a result of population growth, urbanization and inflation caused by the discovery of the Americas and its gold and silver. Rising grain prices stimulated agriculture, technical progress, land reclamation, trade, ports and fleet. This process happened even more in the western and northern parts of the Netherlands, Holland and its adjoining areas. Thanks to its relative freedom, modest vested interests, within the subtle integration brought about by the water control, it could capture the many available opportunities of growing population and trade, especially in the second half of the 16<sup>th</sup> century. Its good location, near the North Sea, was an advantage, but it needed a special structure to take full advantage of this, as others – like Spain and Italy - who did not use a similar advantage, clearly showed.

Again, a unique demographic pattern supported this progress in Holland. Its population grew faster than anywhere else in Europe, at first both rurally and in the many small towns. Only after 1570 urban areas took a clear lead, with migration from everywhere contributing to spectacular changes. The population in Holland doubled within 100 years, manifesting a population growth of 0.8% every year, unheard of before. Holland clearly was the most densely populated and urbanized area in Europe. By 1560 half of its population lived in towns, many not so large ones.

A subtle interaction between population growth and economic progress took place, the former providing high labour supply and much market demand for products, the latter creating the incentives for early marriages and high birth rates. Mobility was high at all levels and the economy monetized rapidly with the guilder as accounting unit. And when the ban on interest was officially lifted in 1543, by Charles V, a real capital market with formal credit and loans could emerge, even though that ban had been more and more ignored before. Interest rates stabilized after an initial collapse following the discovery of American silver, with money becoming relatively cheap (5%) in Holland and England in line with much economic activity.

Rural development accelerated first in Holland, later taken over by the many non-agricultural activities in growing towns. Agriculture was the largest economic sector with many linkages to domestic and international trade, towns and other industries.

Increasing imports of wheat and rye from the Baltics fed up to 20% of its population, even more so later, keeping domestic grain prices and therefore wages low, at least initially, and allowing farmers to concentrate on other high value crops and even more profitable livestock, responding to relative price changes and new opportunities.

Some specialization now also occurred, with more reachable and growing urban and international markets, as farmers increasingly concentrated on their farming, leaving other activities, like dike and drainage maintenance, trade, transport, fodder, manure, handicrafts, energy (peat) to others. As the rural economy kept on diversifying, so did the occupational structure with new professional specialists all the time: craftsmen, workers, traders, transporters and contractors. Soon only 50% of the population of Holland was engaged in agriculture, very low for the time, but with most of the others depending on it in one way or the other too.

This trade-driven specialization transformed the Dutch countryside. Flexibly responding peasants now turned into real farmers, almost like capitalist entrepreneurs, a radical change that was made possible by the existence of local markets and dealers linking demand and supply. Markets for intermediate outputs also accompanied these changes, for fodder, manure, breeding stock, equipment and transport, so that farmers could buy these rather than having to produce all their needed inputs themselves. Such market structures, often a rather accidental outcome of struggles between elites and peasants, to a large extent facilitated positive responses to new opportunities in domestic and foreign trade, and in that sense Holland was lucky. Similar rural transformations only took place much later elsewhere in

Europe, resisted even by the peasants themselves. In Holland it contributed to a higher wealth for a doubling population within a century.

It turned farmers into risk takers, responding to market price changes, selling and buying even the same commodity if that was profitable, like exchanging expensive own wheat and butter for cheaper imported rye and butter. And shifting from cultivated land to pastures and back, if that was more profitable. Prices corrected the high risks in agriculture somewhat, as scarcities led to price rises and vice versa. Grain prices remained important, relatively compared to those of other crops, fodder, manure and wages. And higher livestock prices, compared to grain, promoted a shift to pastures in the 16<sup>th</sup> century. High grain prices would later stimulate some return to arable farming again.

Specialization contributed to a higher agricultural productivity, of land and labour, and to larger farms and more cattle. More cattle also meant more manure and better fertility of the land, with higher crop yields, and to new crop rotation systems with less fallow land. Fodder crops, like clover, were especially good for nitrogen in the soil. And a true market for manure and fertilizer arose, at the surprise of foreigners, with the use of much urban waste, peat ash, soap and brick ash, lime and even shells and sea weed.

Nearby markets for output and inputs also allowed farmers to bypass common crop rotation limits. And the higher fertility of the land and its intensive use pushed grain yields up to ten times the sown seed by the year 1600, ratios that the rest of the world – except Flanders and England – would only reach in the 18<sup>th</sup> century, being stuck at the medieval level of 1:3. Similarly, better bred and fed Dutch (and Friesian) cows gave over 1000 liters of milk a year, with 600-700 liters being normal elsewhere.

Higher yields and productivity pushed land rents up four times between 1515-1570, and then again four times until 1650. This attracted urban investors who felt encouraged by a reasonable institutional environment with less fragmented markets. These new investments enabled farmers to respond better to the new and rising domestic and foreign demand, with improved soils, reclaimed land, canals, bridges, sluices and roads. Redistributed property from the church and nobility also consolidated this process. And the small size of the region meant that everything was nearby, markets, towns, rivers and the sea, especially when transport costs diminished with better canals and the introduction of barges pulled by horses (*trekschuit*), much faster than sailing. Internal traffic was remarkably busy for the times, as often observed by foreigners. Roads were not yet much developed.

Next to grains, dairy and industrial crops like hemp, hop, flax and madder, a new kind of intensive agriculture was borne around towns: horticulture. Originating at gardens of the rich, the growing number of common urban people now also started to eat carrots, onions and cabbages, adding more refined beans and peas when their incomes increased. Flowers for decoration became also grown commercially, especially on the sandy soils behind the dunes. When transport improved horticulture could move away from urban centres in search of better soils and plenty of labour. Fruit trees thus were established outside the centre of Holland. Humid soils gave the Dutch an advantage over other countries, where it was often too dry for vegetable cultivation. In principle, horticulturalists were not ordinary farmers, except in fruit orchards, but a different trade of former urban gardeners altogether.

### *Sailing the Seas*

The endless struggles with the water had also made the Dutch very confident to sail the rivers and seas. Its oldest profession, fishing, became more important with technological innovations. New kind of larger and faster ships, both inland fishing boats and seagoing vessels, made fishing more profitable and allowed sailors to venture ever further away.

The Baltic trade was captured, its grains and timber being transported all over Europe, and thanks to a new 'buss' with preservation (salting) facilities on board, herring became the dominant fishing trade. With an average catch of 40,000 tons per year, the Dutch – with Zeeland -virtually had a monopoly in Western Europe. Its herring fleet of over 400 large ships became famous in the world, with urban investors controlling the business in which the fishermen were the workers, often collectively sharing the risks. It was also one of the first trades where the government directly intervened, with town

councils controlling quality and offering some protection at times. More public involvement in other economic sectors followed later in the 16<sup>th</sup> century.

Shipbuilding became a sophisticated trade too, in relation to fishing, with new techniques learnt from the Spanish and French and much division of labour. Faster and larger ships – like the Hanseship - could transport bulk goods (grains) much cheaper than before, and on top of its strategic location this helped the Dutch to become a very important player in international trade. As the new brokers in Europe they shipped everything from north to south and east to west. By 1565 they had at least 700 large, full-rigged seagoing vessels, and many more small ones; more than England and France together, and twice as much as Venice at its zenith.

Its *fluit* (*flyboat*) from the end of the 16<sup>th</sup> century, a specialized and economical cargo carrier, was a much admired piece of art. Its large carrying capacity and small crew meant an important reduction of transport costs, highly competitive compared to other countries. Harbour construction flourished too. The shipwrights became a blossoming industry then, with its wharfs the first large scale enterprises with over 100 workers. International trade and transport benefited much from lower transport costs thanks to the new ships built, and it boosted Dutch developments greatly through its dynamics, even though it never exceeded 10-15% of its GDP.

Many other (small) industries grew in towns near rivers and the seas, as a result of fishing and shipbuilding: net and rope making, timber sawing, salt, trade and transport. These all benefited from a flourishing agriculture, where surplus labour had been liberated earlier on, much before other countries too. And a cheap and abundant energy source (peat) also helped a lot, next to much (free) water and wind energy transformed via mills. Town councils also eagerly promoted local industries, but tried to discourage rural enterprises, often in vain.

Most industries were processing agricultural goods: beer, textile, timber, lime, loam, sugar, hides and skins. Textiles had been the first industry, with beer, but suffered early in the 16<sup>th</sup> century, as a result of wars and foreign competition from England and Flanders. Guilds also tried to prevent technical progress, like the spinning wheel which threatened labour. Trade was then still very important for textiles, accounting for over half of all exports and imports if the southern parts of the Netherlands (now Belgium) are included. Antwerp was still the dominant port around 1560, the first general bonded warehouse in the world, like an *entrepôt*, and also an important outlet for Dutch trade. Its export trade was 20 times that of Amsterdam, but it was mainly using ships from Holland and Zeeland. Many luxury items went to England and other European countries: fine and light textiles from Flanders, and African spices, like cinnamon, pepper and sugar, brought by the Portuguese, as well as alum, an important dye fixer to brighten cloth.

Amsterdam was rapidly becoming the first city in Holland, with its powerful merchant navy, building a staple market upon the Baltic trade which brought in 100,000 tons of grain in 1560, five times the amount of 1500. And 70% of all trade was moved in Dutch ships. This was to make Amsterdam into the central grain market and storage center of Europe, re-exporting grain and timber to England and France, and also herring and textiles. The imported wheat and rye depressed local prices, which was good for industries in keeping labour cheap and competitive. Growing trade stimulated Dutch industries too and contributing to important financial activities in Amsterdam, like banking, credit and insurance. The city was also lucky enough to be able to link international (sea) trade and transport to domestic (river) trade. But while the latter played an important role in the early stages, it was gradually overtaken by sea trade.

### *Liberation*

All these economic changes did not happen in a political vacuum. The Low countries, Netherlands and Belgium, had become part of Spain, through marriage within the Habsburg rule, and that was to have far reaching consequences. The king of Spain, Philip II, tried to increase the power of the central authority, and this was resisted by the Dutch who were never used to that.

Conflicts over authority had fed resentment before, but this became serious after 1550 around the issues of taxes and religion. Holland and other provinces became increasingly reluctant to fund a war,

with France, with which they had little to do. It was also the time of the Reformation and the first Protestants, the radical Anabaptists, who appealed to the poor, were severely repressed around 1530. Spain would not tolerate any Protestantism, and the newly introduced Inquisition with its notorious stake was to take this literally.

But when Calvinism gained ground in the late 1550s, through a good organization, this could not be stopped anymore. The Dutch demanded freedom of worship and use of their own language and felt strengthened by Calvin's recognition of rebellion against authority at times.

After the Inquisition had burned over 8000 people, in retaliation of an iconoclasm that had swept over many Catholic churches in 1566, destroying its statues and paintings, people were ready to take up arms. A disputed reorganization of the dioceses, a weak effort to strengthen the Catholic Church again, and a highly controversial new sales tax (of 10%), *the Tenth Penny*, provoked open resistance.

An ad hoc coalition of the nobility and urban elites, led by the charismatic and wealthy German prince William of Orange, took up arms in 1568, supported by the mob. Amsterdam was reluctant at first, fearing damage to its economic interests. Privateering

'Sea Beggars' (*geuzen*), notorious bands of impoverished nobles, easily captured all sea towns in Holland and Zeeland after Brill in 1572. Their luck was that a bankrupt Spanish army with mutinous soldiers had to give up the recapturing in 1575. Much of the fighting then diminished, only flaring up occasionally, although the formal war was to last for 80 years until 1648. In 1579 the northern parts of the Low Countries officially voted against Spain and Catholicism, in the Union of Utrecht, whereas the southern parts, now Belgium, choose to remain with Spain and Catholicism. They had always been quite separated and different anyway, despite several efforts at unification.

And so it was that a struggle for religious and administrative freedom by an accidental alliance, turned into an official fight for independence. A common external enemy had enabled various provinces to overcome their differences and gradually forged some kind of national unity. In 1588 the United Provinces of the Netherlands were officially created, the Dutch Republic in short, a loose federation of seven provinces with a States General. In fact, these were really seven small republics, with only a limited role for the co-coordinating body, and a heavy domination by Holland and its cities. But at least these were not separate city-states, as in old Greece or Italy, and there was a common foreign and defense policy with some general taxes to pay for the army and navy. Federal affairs were slowly extended, to shipping regulations, church affairs and colonial expansion.

In fact, the States General and provincial States had been in existence for over a century, just acting in support of the various foreign rulers. Only now did these become meaningful governance entities with some autonomy, meeting much more regularly and gradually creating the various layers of a mature administration. Still, city councils remained very dominant for a long time, especially in Holland, with a further declining role for the nobility, and clergy, but not in the East.

The States of Holland, with 18 representatives of towns and one for the nobility, an influential member together with Amsterdam, had been very instrumental in creating the new State. It continued to dominate matters, in return for contributing the lion share of taxes, around 60%. Its leader, the clever 'Advocate' Oldenbarnevelt, played an important role in building the new State. In general, this process proceeded remarkably smooth, not in the least because of a booming economy with enough funds to defend its interests.

Protestants were rapidly controlling all the important State bodies, even though they represented only 10% of the population around Independence, and remained a minority until far in the 17<sup>th</sup> century. The 'father of the nation', the competent and tolerant William of Orange, was not to see the product of his endless efforts at fostering national unity. He was assassinated four years earlier by a Catholic fanatic. But his sons Maurits and Frederik Hendrik continued the fight, Maurits succeeding his father as Stadholder of Holland and Zeeland, the executive officer of the States with military powers. The Oranges were to play an important role in the future of this small republic, though with quite some friction at times. Up to today the House of Orange is intrinsically linked to the Netherlands.

### *Golden Age*

The creation of an independent State ushered in a wave of creativity, liberating private interests and skills that soon would dominate the world market. Indeed a 'Golden Age' would follow, in spite of the ongoing war with Spain, or paradoxically maybe stimulated by that very war situation. The Calvinistic idea of being 'God's chosen people' contributed to this superiority and so did a relatively high level of education, thanks to the church.

International circumstances were favourable, apart from the war with Spain, as other countries were too busy with themselves or fighting (religious) wars, and grain prices and trade remained high until 1650. Moreover, England and France did offer some subtle help against Spain at times.

The clever approach adopted by the public authorities, city councils and provincial States, led to a unique synergy between private and public interests. Relatively free trade was supported by public policies and investments, wherever necessary. The looseness of the federation prevented a too dominant role for the central authorities, which could have harmed the accumulation of wealth through private interests. Our southern neighbours Flanders and Brabant, including the very important port of Antwerp, lost much of their competitive strength under the Spanish yoke.

Antwerp also received a number of blows from a shifting Portuguese spice trade and English cloth trade. But its decline was also due to direct interference by the Dutch, such as the blocking of the Scheldt (river) by chain by privateers from Zeeland in 1578, and by the departure of many skilled workers and artisans to the North, often Protestants. Its population declined from 85,000 in 1560 to below 50,000 around 1600, and within that short period it had lost the number one position in world trade to Amsterdam. That city also cleverly trumped domestic competitors, with lower transaction costs for its trade and business, thanks to its good location, transport and cluster of aggressive entrepreneurs assisted by the city council. An open attitude and long-term view contrasted favourably with short-mindedness of others, like Dordrecht, trying in vain to cling to old monopolies, like staple rights. And its opportunism in political affairs, often not ready to choose for the right cause if that harmed its economic interests, also made a difference.

Amsterdam's flourishing business is clearly reflected in its demography: From 11,000 inhabitants in 1514 to 30,000 in 1570, 60,000 in 1600 and 140,000 in 1650.

Other cities in the province of Holland also grew rapidly, especially the sea towns, and in 1600 that small area could claim seven of the 40 Western-European cities with more than 40,000 inhabitants. Its population kept growing faster than elsewhere in Europe, until 1650, and tripled to almost a million people in one and a half century, including some neighbouring areas.

Towns now started to grow faster than the countryside, especially the maritime ones, and soon 60% in Holland lived in urban areas. The rural population also kept increasing until 1650, and much of this population explosion was due to migration. At least 0.5 million migrants settled permanently in the Dutch Republic during the 16<sup>th</sup> and 17<sup>th</sup> century, mainly from Flanders, Brabant and Germany, with Protestants from France and Jews from Portugal as well. Dutch who had fled the Spanish persecution now also returned from England and Germany, and many foreign sailors stayed temporarily. Many of the immigrants carried important skills from which Dutch industries and trades benefited. Their presence also contributed to an open attitude to the world and its economic opportunities.

Many rural people came from other parts in the Netherlands too, especially the stagnating east, seasonally and permanently. Even in the whole of the Netherlands then, despite the very uneven developments, one in four people lived in a town larger than 10,000 people, as compared to one in ten in England. Around 1650 there were two million people in the whole nation, a number that would not rise further for a long time. Yet the spectacular economic performance and the culture it created were more or less limited to its western region of around 60 square miles.

The rapid urbanization reflected and contributed to a much more urban boom after Independence than before, with a dynamic interaction between trade and industries, still linked to agriculture, and with a dominant role for Amsterdam. Trade and its related services, shipping and finance, became the engine of growth for Holland, with Amsterdam building upon its grain trade from the Baltics and benefiting from booming international grain trade and prices. Antwerp's downfall helped too, but Amsterdam

had its own different strength, more maritime and more aggressive, with its own ships going to the sources of traded produce rather than relying on intermediaries as Antwerp had done.

Merchants were king in the independent Republic, having little to fear from the nobility and clergy, and were subtly supported by the State in their exclusive pursuit of money making. Working together they shared and so reduced risks, e.g. on holding inventories and stocks, and as international wholesalers they controlled the largest storehouse in the world: a staple market for grains at first, followed by other items, like timber, textiles, silk, dyestuffs, sugar, spices, fruits, cheese, butter and silver.

They acted as a buffer between demand and supply, took grains and timber from the Baltics to southern Europe, and spices, wine, fruits from there to France, England and Sweden. Its location helped to link all parts of Europe together. The gradual move from cheap bulky goods, like grains and timber, to higher valued luxury items, like silver and spices, was very profitable. Profits on spices were at least ten times its cost price, for pepper, cloves and cinnamon, especially when one went for it at the source. No wonder that a colonial trade gradually came to replace the imports from Spain and Portugal.

In 1602 the Dutch East-India Company (VOC) was created, a unique venture between private merchants and the State, States General, States of Holland and Zeeland and various towns. It operated largely from what is now Indonesia, Ambon and Java, but gradually spread its wings all over Asia: Japan, India, Ceylon, Thailand, and China. Even South-Africa became an important intermediary point and the Dutch thus laid the foundation for its later colonial empire, trade backed up by the power of guns. A very early offer by Spain to trade Indonesia for peace was rejected. Before the end of the 17<sup>th</sup> century the VOC became the largest firm in the Republic, and maybe in the world, with over 20,000 employees. Over 5,000 Europeans settled in Batavia, now Jakarta.

A West-India Company (WIC) was to follow soon, aimed at the Americas, Brazil and New York, but its business in bringing slaves from West-Africa to its sugar plantations in Brazil and elsewhere, a few thousand annually, was never very profitable. This is one reason why New York – then called New Amsterdam – was sold to the British by Pieter Stuyvesant in 1664, in exchange for Surinam.

Even though the value of its colonial trade never became more than 20% of the rest, with the Baltic trade remaining dominant for a long time, it played an important qualitative role in cementing Dutch primacy in world trade which lasted for one and a half century. The value of Dutch international trade more than doubled within a century: from Dfl 40 million in 1560 to Dfl 100 million in 1650. And the VOC also played an important role inside the country too. As largest single employer it pumped wages of three to five million guilders into the economy, contributed annual taxes of at least half a million, ordering supplies from others of another Dfl 1 million and paying an annual dividend of Dfl 2 million for a long time. No wonder that the Dutch government continued to support this company even long time after its fortune started to dwindle.

Trade-supporting services grew around this immense warehouse. Capital became very cheap in Holland (and England) in the course of the 17<sup>th</sup> century, with interest rates declining to 3%, or 2% below European levels. All this easily accessible capital fuelled trade enormously, together with joint efforts at risk reduction.

The bank of Amsterdam (Wisselbank from 1609) played an important role in creating an efficient capital market, making direct bank transfers a common matter and accepting specie deposits. A bill of exchange became the key instrument to finance trade. Merchant banking and acceptance houses followed, maritime insurance too, and a real stock exchange (Beurs) opened in 1611. Soon uniform prices for over 300 commodities were quoted there.

All this made Amsterdam the center of international finance as well, with much foreign lending, e.g. to Russian industry on a long-term basis, but including speculative trading as manifested in the tulip bulbs mania in 1637.

The State helped by offering some protection at times, even though in principle maintaining a reasonably free trade, with low tariffs on exports and imports. Mercantilism never got much hold in the Dutch Republic, contrary to other European nations, as a result of its decentralized nature, with

towns overruling the central government for a long time, and because of the primacy of commercial rather than industrial interests.

### *Industries*

Increasing urbanization and trade, and the availability of a good transport system and cheap energy (water, wind, and peat) stimulated industrialization. Processing industries expanded first, actively supported by city councils. A movement of industries from rural to urban areas was accompanied by larger scale operations. With the largest urban population in Europe for a long time, its domestic market also mattered, with its prices linked to the world market.

The textile industry picked up again rapidly, after its earlier slump, aided by Flemish migrants, and its production increased tenfold until 1650, to 100,000 pieces, which then was only double its volume of around 1500. Leiden became the largest European producer of woolens and Haarlem for linen, with important technical innovations – a new loom - leading to more specialized, fashionable and refined (lighter) cloth than the heavy medieval *laken*. Much of the sector was engaged in finishing imported textile, as Haarlem specialized in bleaching linen imported from Germany), Leiden in weaving imported wool from Spain) and Amsterdam in silk.

Constant cost reductions kept the industry competitive, and the respective city councils introduced a valuable quality control. At its peak around 1650 it employed over 50,000 employees, the same as in shipping.

The trade in high-value produce contributed to export industries based on very specialized skills, often the domain of migrants: weaving, bleaching, printing, sugar refining, and diamond cutting and polishing.

Beer breweries, each town having its own beer, did not do so well in the face of new competition from *jenever* (gin), coffee and tea, but other industries also boomed: shipbuilding, sawmills, sugar refinery, tobacco, salt, bricks, and tiles (Delft), distillery (Schiedam), pipes (Gouda), paper and printing.

Construction and herring fishing also kept on expanding, but none as fast as shipbuilding. This became the first large scale industry in Holland, with some wharfs employing a few hundred people. About 500 new vessels were built every year, typical Dutch ones (*fluit*), large and fast, which were in high demand all over Europe. Its own merchant fleet also grew fabulously, to 4000 large ships and small ones, with both number of ships and carrying capacity far exceeding that of its competitors. For a while Amsterdam ruled the world, immediately after the end of the Spanish war in 1648.

Many of these activities took place in an area along the river Zaan, just north of Amsterdam, the so-called *Zaanse Schans* (*SEE COVER?*), which became Europe's first industrial zone, with over 10,000 people in shipbuilding alone. Its location was very attractive to water and windmills, with regular Western winds from the nearby North Sea. Wind was a cheap energy source profitably used industrially after the design of a larger and stronger mill. At its zenith there were over 500 mills processing flour, oils, paper, timber, tobacco, paint and stones. Even merchants invested in these mills, collectively to share risks.

Another advantage of this Zaan area was that it could pay lower wages than elsewhere and introduce many technical novelties, patented and exported all over Europe, as a result of the absence of guilds.

This medieval type of organization of craftsmen and artisans still played an important role in many towns and industries, protecting its members by limiting external competition and resisting labour-saving devices like the spinning-wheel and mechanized sawmills. Each and every professional group was organized in this way, bakers, butchers, shopkeepers, artisans, traders and even merchants. But their regime was gradually undermined by new entrepreneurs, with subtle support from the authorities, wanting to move from small workshops to larger factories, and by contractors. New industries that sprang up as a result of trading and shipping, like the processing of herring, salt, madder, tobacco, sugar, timber and brandy, were largely kept guild free. And the church no longer had the power to support guilds in their limitations of economic freedom.

But elsewhere, especially outside Holland, guilds remained important for a long time. They frustrated the creation of large scale industries and thereby the share of own produce in Dutch trade as compared to foreign goods. This also kept the labour productivity in industries rather constant throughout the

17<sup>th</sup> century, even though output per capita increased despite the population growth, probably due to more working hours per person.

Still, largely as a result of international services, shipbuilding, herring fisheries and textiles, economic growth in Holland during the period 1500-1650 was 1 to 1.5% annually, a unique performance for the times. It may rightly be considered the first modern economy in the world, not in the least because of its advanced agriculture.

### *Agriculture*

The fact that agriculture was no longer the leading sector during the Golden Age did not mean that it stopped developing. It continued the revolutionary rural transformation until after 1650, when grain prices started their worldwide decline again, and remained the largest single economic sector for a long time thereafter.

Yet, less than half the labour force was employed in agriculture, at least in Holland, Zeeland and Friesland, a reduction (from 80%) that other nations only achieved two centuries later, freeing their agricultural labour at last to industrialize. In the meantime, those other countries, like England, benefited from the pioneering role of the Dutch in agriculture, as it exported its expertise in farming methods, fertilizing, crop rotation, watering and simple tools all over Europe. Dutch land reclamation efforts were introduced in England, France and Sweden. Just like present day foreign aid, that technical aid was not always successful, in view of differing circumstances abroad.

The booming economy and agriculture led to renewed land reclamation efforts, this time larger than ever, thanks to the improved windmills and to the capital made available by the government and by urban entrepreneurs. A better control of groundwater levels in general also contributed to a higher productivity of the land.

Increasing income from a rapidly growing urban population and more industrialization meant a higher demand for agricultural products, to which farmers could relatively flexibly respond. The value of land (rents) increased fourfold in the first half of the 17<sup>th</sup> century, reflecting the highly profitable nature of agriculture. During that period about one third of cultivable land was added, about 1000 ha/year, with large polders in the north of Holland (Beemster, Schermer) where Dfl 10 million was invested between 1610-1640. Some 200,000 ha must have been added in total, including the reclaimed peat bog areas, with a number of polders also in Zeeland, Friesland and Groningen. Several thousands of new farms were created this way, a bit larger on average than the common ones.

The new investments in agriculture contributed to a further specialization and intensification, initiated earlier in response to nearby urban markets and the availability of plenty of labour and manure.

Agricultural productivity increased further and labour became twice as productive during the period 1510-1650. Crop yields did not necessarily increase further, but these were much higher already than elsewhere. Soils that were not so good were drastically improved by hard labour and heavy fertilization with manure, oilcake, urban refuse, marl, lime and ashes from peat, bricks and soap. Sowing seed in rows reduced the losses and other innovations like deeper ploughing also helped. As the many investments kept rural wages high, almost as much as urban ones, despite the population growth, some labour-saving devices were gradually introduced as well, e.g. simple tools for winnowing and threshing grains. Some credit facilities were created for farmers too, including mortgage.

Horticulture now also expanded, in response to higher incomes in towns and changing diets, with vegetables mainly in Holland near Leiden and Delft, more refined peas, salads and strawberries now also, and orchards in Zeeland. With better and cheaper transport areas further away could now also go for this intensification, like the Betuwe between the rivers Maas and Waal, as long as plenty of labour was available for these high-value crops. Exports of fruits and vegetables to England increased during this period.

The livestock activities in Holland, Zeeland and Friesland also flourished, while indirectly contributing to better soil fertility through fodder crops like clover and turnip, and much cow dung, especially once stall feeding was introduced. These farmers excelled in stock breeding and dairy produce. More and better cows were introduced, raising their productivity so much that its price



tripled within a century. Fattening cattle took place in Holland, arriving from Drenthe and abroad. Around 1600 at least 10,000 oxen were imported from Denmark, and in northern Holland alone an average 50,000 cows were fattened annually.

Dairy prices were good and there was much trade in cheese and butter. In cities like Alkmaar and Gouda more than five million pounds of cheese were traded in the middle of the century. Much was exported also, to England, France and Germany, from other cities as well: Hoorn, Amsterdam. Much salted meat was required for the many ships on their long journeys.

Non-agricultural activities also expanded rurally, as many farmers wanted to spend some of their new wealth on farm tools and consumer goods: textiles, furniture, clocks, copper, jewelry and brick houses. Many craftsmen, traders and contractors were also active rurally, hiring landless labour that had not made it as farmers. Land reclamation, water control and dike maintenance employed a large number of people, as did fishing. Next to herring cod, shellfish and whaling also came up after 1600. But even other professions were present in the countryside: bakers, smith, shopkeepers, teachers and lawyers. The church continued its remarkable education efforts and reached most rural people mid century. While most industries had moved to towns, benefiting from economies of scale nearer markets, many rural services like trade and transport stayed. Peat digging remained a very important industry, with almost 300,000 ha being stripped of its peat since 1600.

Directly and indirectly, most trades depended heavily on agriculture, even though relatively few people directly worked in it anymore. And just as in agriculture, innovations also contributed to productivity in other sectors, like fishing, shipping and dike maintenance. Many patents were issued by the States General. Technical change was propelled by high wages and cheap capital.

Unfortunately, most of this spectacular modernization bypassed the eastern and southern zones of the Netherlands, with some mixed results in the intermediary areas near the West. Without the benefits of rapid urbanization, nearby markets, nor population pressure, yet continuous control of nobility and the clergy, not much changed in traditional agriculture for a long time. Noble families continued to control 15 to 30% of the land in certain areas, with manorial rights persisting up to the 19<sup>th</sup> century in some areas. War damage also prevented change, especially in the South.

Subsistence production dominated and there was little intensification or diversification to other crops than foods, despite the presence of some towns and markets. Little manure was available for soil fertilization either. Cheap grains from the Baltics also prevented grain supplies from the east and south to Holland. There was less individualization than in Holland, as common organizations and landlords continued to guide the many small peasants, and even monetization did not really rule until the 19<sup>th</sup> century. Many people continued to live in extended families, not the nuclear type of four people already common in Holland, even in its rural areas.

However, some linkages with the west were there, especially in the nearby zones like the Veluwe, where buckwheat and tobacco was grown. Sheep delivered woolen to the textile industry and in Drenthe horses and cattle were bred for export to the west. Grain prices in the east reacted to market movements in the west, but those in Poland remained more important for Holland. Some land reclamation also took place here and there, but overall a very extensive agriculture persisted.

### *Riches*

What did all these changes do to the wealth of the people, especially in Holland and nearby regions? A historically unique economic growth of 1 to 1.5% per year for more than a century must have filled many pockets, even though this was not much more than the population growth (0.7%). Wages had been higher in Holland than in the rest of Europe and remained so until 1800, also in real terms. Farm labour received one guilder a day around 1650, and that was twice the English level and more than in Germany or in what is now called Belgium. Unskilled wage labour received 3.5 *stuivers* (5 cents each) a day in 1500, 13 in 1600 and 18 in 1700. That meant that around half the urban population had an annual wage of around Dfl 250 in mid 17<sup>th</sup> century. Skilled workers easily fetched Dfl 25 per month, which meant an annual Dfl 500 for another 30% of townsmen.

Real wages increased by 60% during the booming beginning of the century, despite a growing labor supply and despite high cost of living, caused by the expensive grains people used to eat and drink, rye

bread in particular. Real wages kept on rising until late in the 17<sup>th</sup> century, and then stabilized. This long maintenance of purchasing power was unique in Europe too.

In general, there was a clear improvement in the standard of living in the western parts of the Republic, mainly because of much more available employment and more (paid) working days per year. Much employment was seasonal and casual, on a daily basis, and the high wage attracted many migrants, also permanent and seasonal ones, who put some downward pressure on the wages and other advantages of the original inhabitants of the region. Food security was high thanks to the Baltic (grain) trade.

People discovered new consumer goods, like coffee, tea, tobacco, chocolate, sugar, mirror, clock and watches, also in rural areas. Even the poor participated to some extent in this new consumption, bedclothes remaining their ultimate luxury for a long time.

But there was poverty too, amidst all the wealth, with high infant mortality and death rates, just like elsewhere in Europe, and a life expectancy of not much more than 35 years probably. Many workers lived close to subsistence, with many ups and downs related to food prices, to the availability of work and to health accidents. Guilds offered some protection to its members, like sickness benefits and funeral funds, and 10 to 15% of the poorest received *caritas* through the church and some local authorities, a fairly unique system for the times. There were work houses and houses of correction and at times quite many civil conflicts. However, political and religious disputes prevailed over economic ones.

Work by women and children might supplement that of the men within a family, especially when wages were low. Relatively speaking, the position of women was not bad at all, even though they were less paid than men and not as free. There were many more of them than men, as many of the 50,000 (male) sailors and 100,000 soldiers died in accidents, so there were many female-headed households too. Their inheritance rights were reasonable, there was little force to get married and their public mobility was high. It was safe on the streets, thanks to unique street lights, and there was enough discipline and social control to minimize wife beating and avoid excessive drinking. Foreigners were surprised about this free position of women and mocked that 'here the hen crows and the cock merely cackles' (Heinrich Bentham).

It was a Calvinist culture after all, even though State and Church were remarkably separated right from the start, with much focus on simplicity, thrift and cleanliness. Despite some initial victories by orthodox Calvinists (Voetius), they did not succeed to limit freedom, or music and dancing for that matter. Witch-hunt had been terminated around 1600, a century before others. Dutch society remained relatively liberal, compared to other European nations, attracting a lot of foreigners and minorities for that matter too, and science and the arts flourished. Quite a few artists were sons of highly skilled migrants who had come before, and apart from paintings the Dutch excelled in medicine, microscopes, botany and insects.

However, it was a very materialistic culture, money making occupying a strikingly dominant position, especially in Amsterdam. This was even reflected in the famous Dutch paintings of the time, like the ones from Rembrandt, more so than elsewhere. The French philosopher Descartes, who spent many years in the Dutch Republic precisely for its relative tolerance, once remarked that for the first time (after many years) had he met a Dutch who did not speak about money.

It is obvious that the owners of capital benefited most from the economic expansion. Total wealth in the Republic increased from Dfl 12 million in 1500 to Dfl 160 million one century later. Most of this was in investments in agriculture, industries and trade. Per capita wealth in real terms tripled from Dfl 200 in 1500 to Dfl 650 in 1650 and little of this was in the hands of the vast majority of working class people.

In the city of Leiden the one percent richest increased their share of capital assets from 20 to 50% during the 17<sup>th</sup> century.

There were a handful of very rich families, including the Oranges, Trip, Bicker and Poppe, owning at least Dfl 0.5 million each. Next to merchants there were also wealthy public officials, often city

councilors, called regents, some military officials and other professions, like doctors. Few nobles were left in Holland, with typical burghers controlling most of the wealth. A gradual shift amongst wealth owners became visible during the boom: from traders in grains, timber, herring and dairy to silk merchants, spice traders and sugar refiners.

Most state revenues came from taxing land and cattle and excise duties on traded goods like beer, wine, meat, peat and cloth. Holland, which paid for 60% of the central taxes, saw its tax burden rise exorbitantly as a result of the military expenditure for the ongoing war. Its per capita tax burden increased from Dfl 1 in 1555 to 7 in 1590 and even 15 in 1635, in line with the exploding army cost. Even at the end of the 17<sup>th</sup> century the Republic still had the highest tax burden in the world, twice the English level.

Europe. By that time there was also a tax on wealth with some efforts to create income tax as well, the poor being exempted.

With a per capita income of Dfl 100 around 1700, \$440 in terms of 1970 dollars, the Dutch Republic was the richest country in Europe; probably also in the world although China at that time was very prosperous too. In England this was at least 20-30% less and in France only half. While this leading position would not alter throughout the 18<sup>th</sup> century, some remarkable changes took place, leaving that income at much the same level.

What probably started with a few courageous fishermen, venturing to sail a little further away than usual, was followed by remarkably enterprising farmers changing the nature of agriculture completely, and ended up with very wealthy merchants controlling world trade and the sea. As a small nation the Dutch Republic generally enjoyed a bit more sympathy abroad than England or France, even though in terms of urban population it was not small at all. And of course there was much admiration for its economic miracle, so much wealth accumulation within a century. But its reputation was tarnished by the presence of a fair dose of greed and opportunism as well, especially in its overseas adventures. The adjective Dutch in the English language still reflects some of this: Dutch courage, Dutch treat, Dutch comfort etc.



### 3 Stagnation

#### *Foreign Competition*

The tremendous dynamism since Independence could not be sustained throughout the whole 17<sup>th</sup> century. During its second half the economic fortunes of the Dutch republic were gradually undermined. This clearly became visible in the course of the 18<sup>th</sup> century when it seemed too late to alter the stagnation of the economy. As usual, there was a combination of external and internal factors at stake in this change of fortune, at first only the former.

A crucial external factor was the rising nation State in England and France. Having solved its internal problems and earlier wars, both countries were now ready to support its own economy and took a Mercantilist course. Its own economy and industry became more protected, which meant harm to the export of the Dutch Republic that could no longer enter these markets so easily. Instead of importing Dutch goods efforts were undertaken to produce these themselves, or at least to ship these on their own vessels and directly from the country of origin. Earlier on Dutch ships had brought them grains and timber from the Baltics, herring, salt and linen from home and wine and spices from the Mediterranean or Far East. The English Navigation Acts from 1651 onwards meant the turning point for Dutch trade supremacy and marked the beginning of a very conscious effort by the English to take over that position.

Wars with England and France broke out repeatedly over economic dominance in foreign trade, right after a final peace with Spain (1648) had liberated Dutch trade to reach its zenith.

This coincided with the end of a long price revolution on the world market, which had influenced foreign trade and European economies favourably for more than a century. World market prices commenced their decline after 1650, especially those of grains, a depressing element that would hinder agriculture and trade for a century. This new outlook directly affected Dutch exports, its industry and its agriculture. And it made foreign trade more competitive, more directly in conflict with England and France, contrary to before when all could prosper relatively easy in an expanding market. England did very well, rapidly increasing its merchant fleet to Dutch levels around 1700, and successfully intervening in trade in the Americas and in Asia, the latter through its own East India Company. But certainly until 1700 the Dutch held on remarkably well, fighting expensive and unwanted wars, but holding on to their dominant position in world trade.

Farmers were the first to suffer from declining world prices for their main products. At the peak of their productivity, by far the most advanced in the world, their incomes started to decline as a result of the worsening market. They were squeezed as they could not easily reduce the exceptionally high wages of their workers that were normal at the time in rural Holland, Zeeland and Friesland. Their high degree of commercialization and specialization, heavy market dependence with the use of much wage labour, now prevented them to adapt quickly to changing circumstances. Further labour saving technologies were not readily available anymore, although some efforts were made.

High taxes on land became an almost unbearable burden with declining incomes, even though some relief was gradually offered by the government. Some protection was also introduced, but mainly for cattle and dairy products, not for crops. Livestock activities suffered less anyway, with some shifts from dairy to less labour intensive meat production.

Land reclamation came to a halt due to the depression and urban investors withdrew their rural funds too. A sizeable number of farmers even had to quit the profession, with some abandoned villages in the Coastal areas, where land rents declined drastically. Paradoxically, the much poorer East of the country was little affected by the agricultural crisis, with its family labour and subsistence production. There even some intensification took place, using more labour, with expanded production in rye, tobacco and hops, even though most people remained poor.

But in the West it would almost take a century before agriculture could start its move upwards again. Fishing was also much hurt by the wars and increased competition, especially in herring which had employed thousands of people, although whales provided some compensation for a while.

Most industries kept up their good performance longer than agriculture. Some new ones came up as a result of the trade in colonial goods: tobacco, sugar, cotton, silk and paper. This was mainly export of processed raw materials, imported before, with some re-exported directly. Others went down gradually, like light woolen cloth, soap, salt and breweries, while major ones like shipbuilding, lumber milling and laken weaving, remained stable for a while.

In view of the increasing protection all over the continent Dutch industrialists also wanted higher import tariffs, but they did not get much as commercial interests prevailed. The sizeable transit trade, with much re-export of imported commodities, would have been frustrated by import duties. A fairly small domestic market and the absence of much own raw materials also prevented the industry to stand on its own, if not linked to trade like the colonial one.

The high wage level in Holland also hurt its industry, especially in labour-intensive sectors like textiles. Scope for more labour saving devices was limited for the country that had led the way in this respect, the pioneer, and the competition was gradually closing the technological gap. Whereas before Dutch cloth sold cheaper in England than its own, that now rapidly changed. England started to charge high duties on Dutch linen, which represented about a third of all Dutch imports to that country, and developed its own textile industry. Only high quality cloth survived the change and the high duties. But in general more competition in textiles from England, Germany and Belgium could only be faced by moving towards cheaper rural areas, like in Twente near the German border and Brabant in the South. There an abundant labour reserve was available, poor peasants that could be paid as little as workers in England, France and Germany. Such an abundant and flexible labour supply was no longer present in the big cities in Holland, having played an important role in earlier industrialization. Despite continuing seasonal migration demographic factors started to change again.

Whereas the Dutch population had increased faster than elsewhere during the first half of the 17<sup>th</sup> century, thereby positively affecting the economy, the reverse occurred afterwards, especially during the 18<sup>th</sup> century. A decline gradually took place, more so than elsewhere, temporarily masked by continued immigration. Plagues and diseases played their parts, as well as high death amongst seafarers, but the shift in reproduction patterns, with later marriages amongst the working class, was influenced by changing economic fortunes. Malthusian concerns, so absent for a long time thanks to a high productivity, took over again when economic decline contributed to more deaths and less births than before.

The population of Holland peaked in 1680, with 880,000 people, and then declined by about 100,000 within a century. Overall, urban population in the Dutch Republic declined from 45% in 1650 to 40% until 1750, and within Holland alone from 60 to 55%. Whereas Amsterdam remained fairly stable, some towns in the west halved their size: Leiden, Delft and Haarlem. This had much to do with the shrinking economic base, as its export industries (textiles) got hurt much by the English and French protection and the subsequent shift to rural areas.

Declines in the west were somewhat corrected by increases in population in the east of the Republic, but the total population stagnated after 1650 until 1800, when it was still about 2 million people. While a rural decline started in the coastal areas from 1650 onwards, that in towns did not begin until 1670 before getting much worse in the 18<sup>th</sup> century.

### *Trade*

Foreign trade continued its boom and benefited from the peace with Spain after 1648.

The Dutch controlled the Baltic, Scandinavian and Mediterranean trade and mainly traded in grains, timber, herring, textiles, salt and wine. Textile trade later declined as the industry contracted, and so did the timber trade as fewer ships and houses were built.

The VOC remained highly profitable, about Dfl 2 million a year, with 20 to 30% returns on investment, mainly on pepper and spices. Only gradually did the Asian trade begin to suffer from English aggression, and from Chinese and Japanese reactions, despite the presence of many soldiers within the VOC. New products like cotton, coffee and tea compensated for shrinking volumes in spices, with some loss in profitability. Colonial trade neutralized losses in European trade for a long time and the VOC remained the largest single employer in the Dutch republic apart from the army,

with over 40,000 staff, paying millions in wages, taxes, supplies and dividend annually. During the peak period this amount may have reached Dfl 10 million, and only after 1680 did this slowly become less.

Absolutely speaking, Dutch foreign trade remained quite stable even throughout the next century, exports and imports each fluctuating around Dfl 100 million annually, but rising with prices over time. But the competition became stronger and England and France expanded their own trade fast. The British had rapidly increased their merchant fleet to Dutch levels by 1700, from a quarter in 1650, and then developed a trade surplus with the Republic. While the Dutch merchant fleet did not shrink, remaining at around 2000 merchant vessels with 0.4 million tons capacity, its share of the European merchant fleet dropped from 40% in 1670 to 12% in 1780.

The structure of Dutch trade changed as its Baltic trade in grains and timber, so long of crucial importance to the economy, diminished under the influence of population decline and wars in that area after 1700, and of English dominance in grain trade with more exports of its own (subsidised) grain rather than importing Baltic grain from Holland. This directly affected Amsterdam's staple market and entrepôt trade, as cheaper British grains replaced Baltic ones and were directly shipped on its own ships to final consumers, even in Holland where some industries like the breweries benefited from the cheaper grain.

But Dutch shipping and shipbuilding also suffered. And foreign trade became less connected to domestic industries, as the latter declined and as colonial goods were now more directly re-exported without processing, often along the Rhine to the increasingly important river trade with Germany. The disconnection between trade and industry contributed to a lack of response by domestic producers to changing external circumstances. Even merchants lost some of their characteristic initiative in trade. And so the Dutch flexibility and adaptation to changes, which had made it famous and wealthy in the past, now became eroded. Somehow no answers were found to challenge the English ascent, or to overcome the rigidity in wages which remained very high. What did not help in this respect was the evolving political structure in the country, which became less supportive of the economy than in the past.

### *Regents*

Internally, a quite peculiar political structure had emerged after Independence, benefiting the new Republic a lot initially, through its loose and decentralized federal character, leaving private interests free to develop. But when the economy did not continue to expand by itself anymore, and the common enemy Spain had disappeared, this structure lacked the strength to respond vigorously to new challenges. There was no strong central State, like in England, which could coordinate interests of different cities and provinces smoothly, resist commercial interests enough to increase some domestic protection for its industries in response to similar behaviour by its major trading partners, and implement a clear foreign and economic policy to the effect of cleverly overcoming obstacles from English and French protectionism and expansion.

A class of 'regents' (governors) had come to dominate political life in the independent Republic, especially in Holland, in the absence of much nobility: a wealthy urban middle class, members of town councils and office holders in city governments. They formed a tight network with other interest groups, like professionals and the military, and through much family businesses and intermarriage. They were good administrators and had economic interests in land and trade. When their political power increased they started to participate less directly in the economy, with no more jobs on the side. They tried to protect their political dominance by more and more excluding others to join ranks. Family background and wealth became the norm for participation. Their wealth became their main asset, earning interest on increasingly less risky ventures, like State loans, rather than in business. Even merchants and other entrepreneurs got somewhat infected by this mentality, not in the least through the corporations in which they participated with regents in order to exercise some political influence. Their business interests slowly shifted from trade to finance, joining the ranks of rentiers in the 18<sup>th</sup> century.

Commercial interests had always dominated industrial ones in the small Republic which thrived on trade. But a growing conservatism contributed to certain rigidities and to missing the boat, even when that trade dominance came in peril. Dreams of the glorious past increasingly blinded the authorities to clearly view present challenges, such as to respond adequately to a diminishing role of the Baltic trade in grains and timber and of Amsterdam's staple market. Neither were policies designed to overcome the high wage rigidity that made Dutch goods increasingly uncompetitive in the world, for instance by reducing taxes, nor to focus on what really was the Republic's comparative advantage in the new circumstances. However, some might argue that international finance really was the Dutch niche.

Several crises illustrate the damaging effects from this typical political structure on the economy. In 1672 disaster struck as England, France and Germany attacked the Republic simultaneously. Only by putting large parts of Holland under water could the invading French be stopped, while the navy beat the English. But this war had drastic political consequences as there was a serious popular uprising against the political leaders, who were accused of weakening the defense of the nation and threatening its security. William of Orange (the third) was brought back as *stadholder*, a position left empty after his father's death in 1650, while a bitter crowd of ordinary citizens cruelly killed the Grand Pensionary de Witt and his brother, who had led the States of Holland since 1653. The conflict between the regent oligarchy and the Orangists was to paralyze adequate State responses to future challenges again, with democratic demands by the growing middle classes often nipped in the bud by this contradiction as well.

Paradoxically, it was the same William who would later invade England and become its king, after the 'glorious revolution' of 1688, thereby contributing to political and institutional unification in that country and its subsequent economic rise, aided by Dutch expertise in agriculture, industry and banking. Being a constitutional monarch, William could not convince the English parliament to reduce its protection against Dutch trade, but his presence facilitated access by Dutch merchants to London's commodity and money-markets. Despite the frequent wars, economic elites from the two countries kept on mixing flexibly.

A war with France at the same time turned out to be very expensive for the Dutch republic, which showed increasing difficulties in maintaining a large army and navy. The elite refused to tax itself much, and the common man could not be taxed more heavily as earlier tax riots had shown. Per capita tax levels probably were the highest in the world, twice the English level. Farmers were heavily taxed, on their land, and ordinary people paid a lot of excise duty on basic goods, like grains, butter and beer. Wealth was somewhat taxed, but trade profits and income not at all. In view of high cost of living and wage costs, excise duties should rather have been diminished than increased, but this could not happen either. Ordinary people did not have enough political influence to make this happen either. A minor income tax was introduced, but later abandoned again.

Moreover, the States were heavily in debt already, especially Holland that could not even meet Union obligations nor pay the (low) interest on its loans, with a debt of Dfl 300 million in 1713, the bonds largely in the hands of the regents and rich merchants.

The only option was to reduce public expenditure and let the army and navy shrink. Silently it was hoped that diplomacy might now take over from war in defense of national interests, foreign trade in particular, in vain as it turned out, as the English navy kept on growing.

Not that alternative options were not considered. The elite endlessly discussed many issues, such as a strengthening of the central State in view of external threats, some tax on income and some protection for suffering industries. But in the end no serious action was taken and matters continued as usual, not in the least because Holland appreciated its autonomy too much and let its own commercial interests prevail. Amsterdam and other Dutch cities did not want to give up any freedom or privileges. And they had the power to do so, as Amsterdam paid half of Holland's taxes and a quarter of the federal ones.

The result was that highly needed market integration took not place either, with many local tolls and tariffs staying in place and towns quarrelling over staple rights and navigation. It would take a long time before inhabitants of the different cities would truly feel part of one and the same nation and reduce the amount of local conflicts.



Moreover, the elite felt a right to enjoy its hard earned wealth, for which it had fought so much before, and live in luxury from interest on its assets. It built nice houses in and outside the towns, helped its friends and clients to a good life too, borrowed a leaf from the pompous French culture with its fashion, art, architecture and classicism, and showing off by wearing powdered wigs and knee-breeches: the Periwig Age. Little was left of the Calvinistic frugality and simplicity of the 17<sup>th</sup> century, and there were no cultural geniuses either, like the painters.

But there was a reasonable degree of tolerance, rationalism and freedom, much admired by foreigners, while money kept on pouring in from trade and increasingly foreign finance, rentiers funding other governments and their wars rather than investing in riskier business. But as so often, much social satisfaction may go at the expense of alertness required to protect the sources of all this wealth, even though it is always easier to note this with hindsight.

A weak foreign policy and a weakened army meant that the Republic lost its dominant position in the world, even though its own trade kept on growing until 1750. Political shortsightedness meant that the faster growth of the competitors' trade remained unnoticed for a long time, as well as the new answers needed to compensate for the declining Baltic trade. Bigger ships were needed in foreign trade as well, but these were not funded, nor were larger ports to allow for the bigger vessels that even Amsterdam could not handle.

When the French invaded the Republic again in the 1740s, once more occupying Belgium that had been under Dutch economic control, the Dutch weakness became visible for the whole world to see. The people revolted again, forcing the regents to bring back another Prince William of Orange, this time number IV, who had been too young to succeed his father earlier. For the first time in its history this Prince now became *stadholder* of all seven provinces, a function made hereditary again, with control of the army as well as the VOC. Other demands by the protesting middle classes, against private tax collectors and in favour of some restoration of power for the guilds and the city guards, were ignored, just like demands for reforms to strengthen the executive powers of the central State organs.

An important chance was missed, probably the last, to turn the tide and reinforce the national defense, treasury and economy. As so often, these issues were debated extensively, but as the States General could not agree to reinforce either the army or the navy, unanimity required, both were led down again. And the ideal of free trade, so in line with Dutch commercial interests, was not feasible anymore without a strong navy to back it up.

And so the Dutch Republic became the 'stationary state' that Adam Smith discussed in his *Wealth of Nations* in 1776: no more economic growth, no further specialisation nor urbanization. But it continued to be the wealthiest nation in the world until around 1800 when England at last surpassed it.

### *Industrial Decline*

The increasing competition from abroad, lack of protection, high wages and the de-urbanisation really started to hurt Dutch industries after 1730, especially the labour-intensive ones like textiles, breweries and shipbuilding. More capital-intensive industries, like sugar and tobacco, survived, with only paper and distilling continuing to perform well throughout the century and Dutch jenever blossoming on cheap English malt and barley. High wages hurt industrial profits in general, even though foreign and seasonal workers were willing to work below average levels. But the high wages did not stimulate further technological changes, maybe because the limits of labour saving had been reached in Holland at that time.

Yet some innovations took place, like the introduction of cotton-velvet or Turkish satin in the textile industry later in the century. Others were ignored or exported to England, like Dutch scientific knowledge in chemistry, even though guilds were less opposed to such changes than has often been assumed.

Imports of expensive coal, for sugar refining, salt making and smiths, also did not lead to energy-saving devices, as there was still enough water, wind, wood and peat. But the import of coal added to the general dependency of industrialists on suppliers of and traders in raw materials, whose price

increases led to worsening terms of trade after 1750, as export prices could not follow. While the Republic had some raw materials, like flax, hemp, madder and oilseed, many industrial inputs had to come from abroad before being processed and then exported again. That made the Dutch very dependent on international price movements, also for its food imports, ever less to be influenced by them.

High public debt also prevented support to the industrial sector from the government, even if that had been politically acceptable. Borrowing external funds was not easy as much capital continued to flow to the much more profitable trade and money business. Merchants were not interested in industry, and even the agricultural surplus in the past had not really financed industrialization.

Increasing capital export by Dutch rentiers, to benefit from lucrative deals overseas, appreciated the value of the Dutch guilder, thereby frustrating the international competitiveness of industrial goods. It might be considered the first sign of a Dutch disease, even though the term only became fashionable late in the 20<sup>th</sup> century with the export of so much natural gas.

With growing difficulties to export Dutch industries could not fall back on a large domestic market, contrary to the British, apart from protection. The economic stagnation and frozen incomes even diminished that already modest internal market and in the end the whole industrial sector shrunk by one third throughout the 18<sup>th</sup> century. Throughout this whole period the government refused to change the extremely *laissez-faire* trade regime and offer some reasonable protection to its industries as other nations did. Calvinistic rigidity contrasted markedly with British pragmatism in this respect.

A commercial mentality was dominant amongst urban elites and the nation paid dearly for neglecting industrial interests. Major cities like Leiden and Haarlem collapsed when their textile industries suffered, in wool, linen, silk and cotton, unable to reduce costs enough, through rigid wages, or change quality, style or technology once again. These industries departed for cheaper rural areas, worsening urban unemployment and even pauperism. Many people left looking for work elsewhere, to the peat moors in the North of the country, or with the VOC.

Leiden's production of *laken* contracted from 70,000 pieces in 1700 to only 4,000 in 1795, with only five of 29 dye-works remaining. The same happened with woolen and in other cities. Foreign competition and protection abroad also hurt ceramics, potteries and brickworks, and a city like Delft was more or less dead by 1770.

Within 50 years little had remained of these once attractive cities, so lively, free, clean and luxurious in the eyes of foreign visitors. Middle classes, like shopkeepers and other supporting professions, also suffered much from this industrial decline and resentment grew, not in the least over the continuing heavy and regressive taxes on basic goods. Very high urbanization levels in Holland declined just when other European towns started to grow, even though it took them at least a century to reach Dutch levels.

Even the first industrial zone, the *Zaanse Schans*, suffered as a result of less trade in timber, herring, spices and of less shipbuilding. The silting of harbours and rivers contributed to this pain, also in other areas, as nature started to hit back once again. A general neglect of adequate water control measures would only be corrected again in the 19<sup>th</sup> century.

Domestic trade and commerce with its uniquely high levels in transfer of goods and persons also suffered, and with this the linkages within the economy.

### *Banking*

Despite all the setbacks and the changing international environment, Dutch foreign trade kept up its high levels until after another Anglo-Dutch war in 1750. Its capacity to take advantage of needs in other European countries, and of new opportunities as a result of growing population and markets elsewhere, like in the Baltics or Scandinavia, had been seriously eroded by that time. Apart from mercantile policies, with high import duties everywhere, much trade no longer seemed to need Amsterdam's staple facilities, with its quality control, storing, grading and packing. German linen now went straight to England, bypassing Amsterdam, and so did French wine exports to the Baltics, both countries increasingly using their own ships as well. Much commission trade was so also lost to merchants from Amsterdam.

Moreover, as Dutch trade became looser from its industrial processing, this pure exchange of goods was more vulnerable to foreign competition. Even the growing German trade, along the Rhine, did not carry many Dutch manufactured goods. But it kept Rotterdam alive, as Amsterdam survived on its colonial trade and banking services.

Proportionally, the trade with Asia became more important as European trade was reduced, even though that trade did not exceed 20,000 tons, very modest in relation to the capacity of 0.4 million. A new West-Indian Company added profits from lucrative sugar plantations with slaves in Surinam, but apart from that the Atlantic trade had been definitely lost to the English, and its overseas plantations, without much fight. On the contrary, as Dutch merchants increasingly funded English North Sea trade, English money was freed to finance its trade with the Americas. And the Dutch State had naively thought that its trading empire could be maintained without a strong navy.

Even the VOC had become less profitable throughout the century, its profits declining from 18 to 10% of its revenues at first, and then to 2% only. Yet, distributed dividends remained high, even when losses were made, to line their own purse and fool the Amsterdam Bourse. This contrasted sharply with the 17<sup>th</sup> century when more entrepreneurial directors even forwent dividend sometimes when profits were high, to be ploughed back into the company.

Heavy borrowing from domestic regents and merchants, later complemented by major subsidies from the States of Holland, kept the company artificially alive. It had been too important to the national economy, also with its internal linkages in wages, taxes, supplies and dividend, to just let it sink. But the Dutch tax payer increasingly had to pay for very short-sighted policies by ever less commercially inclined directors, e.g. to pump up prices by keeping production low. Once again, vested interests betted too long on the wrong horse, after killing a beautiful trade, and when at last the VOC died after a fourth war with England in 1780, a public debt of almost Dfl 100 million remained.

Towards the end of the century the total value of foreign trade still increased, to Dfl 250 million, but this increase was largely due to inflation caused by the new dominance of bank notes over precious metals, with an important role for the Bank of England. Imports of about Dfl 150 million were fairly evenly originating from the Baltics, England, France, Spain, Asia and the Americas, with exports going to the same European countries, as well as to Germany and Belgium. Over half of all exports now had become re-exports, imported goods in transit, and major export products were jenever, sugar, tobacco, madder and dairy. The trade deficit was more than compensated by capital exports.

International banking was really the only booming business in the Dutch Republic in the 18<sup>th</sup> century, until the end, with Amsterdam remaining the financial center of the world, also its stock exchange. Bills of exchange from everywhere were bought and sold, by Jewish and other bankers, and these financed very different enterprises, from the rise of London, English trade and its army, loans to governments in France, Prussia, Russia and Austria, including mutual settlements, to plantations in Asia and the Americas. At least, the efforts at diplomacy and neutrality paid off in some respects, although Dutch capital and money movements overseas more and more lost touch with its own real economy. Its bankers became international financiers, less connected to their own trade and industry, and merchants substituted the lucrative foreign loan business for active trade.

Around 1760 total Dutch foreign investments were Dfl 200 million, half of which in England. A large part of the British debt of 150 million pounds at that time was in Dutch hands too. Foreigners paid Dutch investors Dfl 15 million annually, and twice that amount near the end of the century, when interests were shifting to London already. The French invasion in 1797 meant the end of the Dutch Republic and the kiss of death for the money and capital market of Amsterdam. Foreign investments had then just reached Dfl 650 million.

Surprisingly, Dutch agriculture revived again after 1750, with its usual ups and downs, recovering from enormous rinderpest which destroyed 100,000 cows in 10 months in Friesland alone in 1745. But it started to respond to population growth in Europe – not at home- and rising world prices and inflation. The decline in Baltic trade had stimulated domestic grain production before, and a new crop was to conquer the world: potato. Known already since 1600, from the Americas, and used as fodder, it became the number one human food item at the end of the century, after expensive grains had forced

the poor to try it out. Thereafter, it soon crowded out grains, being so much more efficient in terms of nutrients (starch). More calories could be bought for the same price, by switching from rye bread to potato.

Agricultural exports rose, of raw materials, dairy and horticulture, also to England where industrialization created new opportunities for imports of raw materials and food stuffs. Despite its short-term rigidity, depending on land and growth processes, Dutch agriculture responded better to the new environment than industry and trade. The country became a net exporter of foods and agricultural raw materials, clearly visible in the early 19<sup>th</sup> century, and has remained so ever since. But its relative role would diminish after the industrial revolution, with agricultural prices then less relevant for the economy and population growth and price increases no longer linked as before.

### *Economic Well-being*

And so the 18<sup>th</sup> century came to an end, during which the Dutch economy lost its primacy in world trade and its technological and industrial advantage. Stagnation had been followed by decline and throughout the century the national income contracted by about 10%. This was largely due to a collapse of the textile and beer industry, shipbuilding and herring fishing, only partly compensated by the paper industry, trade and finance. Little new investment had taken place in the national economy, with most private savings going to the public debt and foreign investments.

But this stagnation took place at a relatively high level. Education levels were high, less than half the people had to work in agriculture, productivity levels were very high and the Republic maintained the highest nominal wages in Europe throughout the whole century. Real wages were also fairly stable until the end, thanks to the cheaper potato. Only around 1800 did English real wages equal Dutch levels again, just as it had done around 1500.

Until 1750 the economic situation of most inhabitants of the Republic had been quite reasonable, with much food security. Over half of the national income of that time of around Dfl 250 million was earned in the province of Holland alone, its per capita income being close to Dfl 200 as compared to Dfl 135 elsewhere. Urban incomes were also higher than rural ones and within towns there was much income inequality.

Half of the urban people in Holland with little skills had to live from Dfl 250 per year, with a 30% middle class going up to Dfl 500. The top 20% of better off citizens received over half of the total personal income, each exceeding the then tax floor of Dfl 600 per family. A group of 16,000 people in the major cities averaged Dfl 2000, and these were mainly rentiers, merchants, manufacturers, public officials, doctors and even some tailors, butchers and bakers.

Wealth was of course in the hands of a small elite, and increasingly so as the century elapsed and much more was accumulated. Total wealth was around Dfl 1400 million towards the end of the 18<sup>th</sup> century, as compared to Dfl 160 million in 1600. Since 1650 private wealth had tripled, just as it did in the one and a half century before that. Per capita wealth in constant prices had increased ten times from Dfl 200 in 1500 to Dfl 2000 in 1800, with Dfl 650 in 1650.

So some things had changed tremendously while the nation stagnated, to the benefit of capital owners. While they obviously enjoyed their wealth, life became harder for the common people after 1750 when industries collapsed and unemployment rose. Even pauperism increased in the midst of so much wealth, partly alleviated by much *caritas* for which the Republic also had become famous in the meantime. It is ironic that a large chunk of wealth was accumulated through strengthening the economy of the country that in the end broke Dutch supremacy, and never made a secret of its intentions to do so, and so indirectly contributed to that misery: England.

As before, the eastern and southern parts of the country participated much less in the ups and downs throughout the century, with mixed results for intermediary zones. Even though there were linkages with the economy of the West, subsistence agriculture still dominated with some traditional structures acting as a safety net in times of trouble. The movement of textile industries had offered employment to peasants and cooters, landless labourers in fact. Still, real wages went down in parts of the East and poverty up, with differences between thinly populated areas like Drenthe in the North, where landlessness increased, and Brabant where a labour-intensive agriculture developed.

The Dutch Republic formally came to an end during the 1790s when the French invaded this small area near the North Sea, after a lot of disturbances and confusion. The American Revolution in 1776 proved to be a breaking point, when the Dutch chose the wrong side, of the French, against the British and its own Orangists, being truly squeezed by various opposing interest groups. Opportunism in the face of French trade promises and arrogance in view of a vast supremacy of the English navy determined the outcome. The republican oligarchy ruined the Republic in this way, blaming it first on William, and then being overrun by democratic forces in the wake of the American and French revolutions. A patriotic movement established a Batavian republic with French assistance, the first time that a popular uprising was not pro-Orange. There was much frustration amongst middle classes, which contrary to England had not participated sufficiently in the politics of the nation and kept on being disproportionately taxed.

The new republic replaced the States of Holland with a directly elected chamber of representatives, and when other provinces followed this meant the end of the typical Dutch federalism with the large degree of provincial autonomy. But when constitutional deliberations took too long, over two years, the French simply annexed that republic.

The economy then also collapsed as a result of all these political changes, also in the rest of Europe, with a lot of disinvestment in commerce and industry, rising unemployment and further de-urbanisation. Declining trust in the Dutch Guilder fuelled by liquidity crises in Amsterdam's merchant bankers meant the end of the Dutch dominance in international finance too and a shift to London and Hamburg. The only booming industries at the turn of the century were jenever and prostitution. It would take almost 50 years before a new take-off came into sight again and some of the Dutch pride in craftsmanship, shipbuilding, trade, finance and management could be restored. Risk taking and technical ingenuity would then once again compensate for few natural resources as they had done so strikingly during the Golden Age.



## 4 The Industrial Revolution

### *British Supremacy*

In view of its glorious past the Netherlands might have been the first country to experience an Industrial Revolution. But the United Kingdom (England) became the first to launch this fundamental change that was to affect all European nations within a century. The successful destruction of Dutch trade hegemony in the 18<sup>th</sup> century through wars and aggressive mercantilist policies played a non-negligible part in this. In fact, the Netherlands was one of the last on the continent to be affected by this rapid industrialisation, almost a century after Britain, and it wasn't even a real revolution. The aftermath of the breakdown of the Dutch Republic was so profound that it took half a century for the economy to fully recover.

The UK did not have such troubles, with a strong State to guide the economy and an agrarian and commercial revolution in the 18<sup>th</sup> century that preceded and enabled the industrial take-off. A cumulative number of technical changes were introduced that were to lift the economy to an unprecedented level, turning England into the factory or workshop of Europe. And a fairly democratic environment, with some respect for the interests of the growing middle classes which started to consume a larger part of the growing GDP and was not unreasonably taxed, meant a relatively hospitable welcome for these changes. The Industrial Revolution was not planned but resulted from a gradual solution of a number of persistent bottlenecks that threatened its industrial expansion.

The increasing scarcity of wood had forced the search for an alternative energy source long time before, to be found in coal, of which the island seemed to have almost unlimited supplies near Newcastle and in Wales. Its production of coal increased twelve fold during 1560-1690 and at the beginning of the 18<sup>th</sup> century England produced five times as much coal as the rest of the world combined.

When at last a technical solution was found to use coal for smelting of iron ore, replacing scarce and expensive charcoal (from wood), the high demand for iron could be met at reasonable costs. When that process was introduced everywhere in the rapidly expanding blast furnaces after 1750, boosting other industries as well, demand for coal rose rapidly too.

This led to deeper mining which caused a drainage problem as this was below water levels. A steam engine was then invented to pump water out of these and other mines, a very expensive process at first, and long tried before. Only the improved engine by Watt in 1769, generating rotating movements rather than up and down ones only, like in a piston, and being much more economical in fuel use, was cheap enough to find introduction here and everywhere from the 1780s onwards, be it at a slow pace at first: Around 1800 there were only a 1000 used in the UK.

When used for blowing of blast furnaces, bar iron production also became much cheaper and this industry could really take off and even start exporting iron.

The rotary steam engine also proved to be a gift from heaven for the textile industry, cotton in particular. The rapidly expanding population in England after 1750, much more than on the continent, demanded more clothes, woolen and cotton. Local spinning and weaving of cotton imported from India was only a recent phenomenon, and this flexible fibre lent itself more easily to mechanization than linen and woolen, with little resistance from relatively weak guilds.

The mismatch between spinning and weaving, aggravated by the introduction of a flying shuttle in weaving, had been corrected somewhat by the first spinning machines (jenny). But it was not until steam-driven machines were introduced in spinning, and later power looms in weaving as well, replacing water power, that the textile industry was revolutionized with ever increasing output of very cheap cotton. The steam engine forced small, part-time spinners and weavers to the factory, with highly economic clusters in Lancashire, and this new specialization and division of labour led to a tremendous growth of productivity, 3% per year for over a century, i.e. a twenty fold increase. Cotton spinning became so profitable that it attracted a lot of capital, also from Holland, while imports of raw cotton increased over twelve fold during the second half of the 18<sup>th</sup> century.

And so the world was changed forever by a few crucial inventions to shift energy from an organic to a mineral and fossil base, taking away major bottlenecks in an expanding industrial empire in an economic way. Revolutionary in this respect was that strange system of valves, tubes, pistons and cylinders that was capable of mechanical labour, provided steam was blown into the system in a special way. Great physicists like Galileo, Torricelli, Pascal, Huygens and Papin ought to be thanked for showing mankind how to tame the huge forces of atmospheric pressure.

From a receptive environment in the UK, with a strong State, a reasonable democracy, rule of law and tax administration, and a growing population and rapidly expanding infrastructure and follow-up innovations, cheap coal, iron and cotton goods were to conquer the world and force other nations to adapt to and imitate this new industrial process. With a very pragmatic shift from protection and mercantilism to free trade, all markets in the world were gradually opened for British products.

Many industries followed the example of cotton, including woolen and linen, even though small scale artisan type production remained dominant all over the world outside textile and iron for a long time, even in England, with many small producers and workers resisting mechanisation. But in the end, the revolutionary jumps in labour productivity could not be resisted anywhere, once technical solutions for mechanization were found. The steam engine had started a process of maximum rationalization in economic behaviour that proved irresistible, not at once but after a long period of trial and error, ushering in a new era with high and sustained economic growth. Only then did vast differences in wealth between Europe and the rest of the world become a reality, with the world becoming a smaller place due to much cheaper transport with steamships and railways.

#### *Entrepreneurial King*

While Britain was undergoing its industrial revolution and becoming the richest country in the world at last, the Dutch Republic was crumbling and eventually ceasing existence.

The French invasion abolished its independence, which was only restored after 1815 when the disrupting Napoleonic wars came to an end. Then Dutch nationalism turned to the Oranges again and a new William – the sixth - became the first king of the United Kingdom of the Netherlands, inheriting a centralized government structure with no more provincial or urban privileges, a number of decent French laws, the Napoleonic Code, the metric system and a huge debt, but no more guilds, urban staple rights or feudal rights of landlords, and for a while no more colonies either. On the other hand, Belgium and Luxemburg now became official parts of the new Kingdom, areas with a much smaller debt.

The past kept haunting the new Kingdom for a long time, with a public debt of Dfl 1.7 billion in 1815, Dfl 850 per capita. An amount of Dfl 30 million in interest had to be paid every year. However, many foreign bonds were still owned then too, valued at Dfl 650 million, but little of the interest of Dfl 40 million per year due to them, was ever paid. Much of this was British debt owned by Dutch banks, three times its GDP, and some was in US bonds.

The new King inherited a nation that was now reduced to its more normal size, i.e. small, with only half of its once impressive merchant fleet, 1000 vessels only. Its sea trade had been decimated by the Napoleonic wars and the value of its exports and imports had dropped to 30% of its GDP, compared to 80% around 1750. Zaandam remained with one wharf only, whereas it had 60 before. Amsterdam's famous staple market hardly existed anymore, even though many grains kept coming from the Baltics. The Netherlands had become more in line with the rest of Europe, even finding it difficult to keep up with the new European pace. It had lost its originality, while others had adopted many of its practices.

But it still was an important economy, despite the crises that had hurt it severely. The GDP per capita was only just falling behind that of Britain, with a heavy concentration of wealth in the West and only 10% really poor people on average, more so in the West than in the East of the country, especially in the cities. As the West had suffered more from the French occupation than the rest of the country, the gap between advanced and poor areas narrowed a bit. In the highly urbanised West 80% of the people worked in industries and services, leaving the other 20% to run a highly productive agriculture with much specialization in livestock, dairy and horticulture.



In the whole of the Netherlands about one third of the labour force was engaged in services, much higher than elsewhere in the world except Britain, which varied from large bankers, traders and transporters to public servants, teachers, small informal retailers and house girls, the largest single occupancy group. Together this sector earned half of the national income, a sign of its high productivity, the other half being equally distributed between agriculture and industry, with agriculture employing about 40% and industries 25 to 30% of the labour force. Only in the much less urbanized East and the South of the country was more than half of the working population still engaged in agriculture. And despite the crises of the 18<sup>th</sup> century and a complete standstill under French occupation some industries had survived, not in the least due to the continued demand of the domestic rich. Only in the UK was more than 30% of the male labour force engaged in industries. A once blossoming fishery sector had collapsed in the meantime, despite all the subsidies, and would only take off again with liberalizations after 1850. As so often, long and short-term interests of a sector or region do not always coincide and subsidies may not help in the end.

King William adopted an aggressive economic policy, a new phenomenon in this liberal country, making use of a central government that had already started to grow before his arrival. The number of its civil servants increased from 175 in 1795 to 1050 in 1810, and more so thereafter. At last a modern central State was in the making that could consciously interfere in the economy, even though a parliamentary democracy evolved only after a new constitution in 1848, with a subsequent enlargement of the franchise from seven to 100% in 1917.

A Central Bank was created in 1816, *de Nederlandse Bank*, trying to relieve the historical debt burden, and a centralized and uniform tax regime gradually replaced provincial and urban taxes, not without a struggle and not without some corruption and evasion. The shift towards more direct taxation, of land, property and income, started by the French was continued, with declining excise duties on butter, fruit, vinegar etc. The Bourse at Amsterdam recovered quickly, even though London and Hamburg had become more important in the meantime, and the rich kept on exporting capital, with much safe lending to foreign governments, like Russia. Dutch foreign investment was valued at Dfl 1.5 billion, twice its GDP, a unique performance of this capital exporting nation. Interest earnings were then Dfl 30 million.

The Dutch economy only slowly became one integrated market with the growing network of railways after 1830, roads and communications, and uniform standards and regulations. It was then that large regional wage and costs differences also started to disappear, even though the West retained part of its historical advantage.

In his efforts to revitalize the Dutch economy the King – who had witnessed the Industrial Revolution in England - had much new infrastructure built, canals at first, then steamship facilities and later also railways. The highly underdeveloped road system – in view of plenty of waterways – was finally attacked as well. Communication facilities were improved, like post and telegraph. Import duties were there to protect industries, as everywhere in Europe in the first half of the 19<sup>th</sup> century, largely benefiting Belgium ones, and soft loans were provided to the textile industry, shipbuilding and shipping.

The creation of the *Nederlandse Handelsmaatschappij* (Dutch Trading Company, NHM) and its dominant role in a recaptured Java, later Indonesia, added important funds to the development of the country. It acted as a modern kind of VOC, benefiting largely from a Culture System (*Cultuurstelsel*) with a forced cultivation of cash crops by local peasants, buying cheaply from them –almost like a tax in kind - and selling dearly in Europe, and shipping goods at artificially high freight tariffs. Exploitation of local peasants was hidden behind complicated relationships with their leaders who acted as intermediaries with the colonialists and abused the system to their own advantage as well. No wonder the shipping industry revived as a result of this flourishing trade, even though steamships were long resisted. Other industries benefited indirectly, through the financing of its soft loans. During the fifty years existence of the Culture System the NHM must have contributed Dfl 150 to 250 million to the State's coffers, only 3% of the nation's GDP but 40% of its tax revenues. Part of the rather

famous Dutch *caritas* at home, workhouses and some silly efforts at shifting paupers to the North, therefore, was indirectly financed by Indonesian peasants.

Some Dutch industries benefited from the King's reforms, like shipping, sugar, textiles and new metal works (machines), but no industrial revolution was in sight yet. However, the economy slowly climbed out of its nadir and started to restore its comparative advantage in agricultural exports, international trade and shipping. Even per capita incomes started to grow mildly again after 1820, for the first time in a century.

Yet, vested interests frustrated the reforms, as so often. Towns and provinces resented the reduction of their influence and tax revenues, cities objected to new canals around their territory, commercial interests felt hurt by the industrial protection, informal guilds and cartels prevented industrial modernization, traders resisted the rationalization of intermediary trade and the reduction of their commission fees and finally, Amsterdam's powerful financial elite did not appreciate the King's interference in the capital market, even though he also used his own money at times. His public investment must have crowded out private ones, even though there was little risk taking at the time, and a growing public debt started to hurt both public and private investments afterwards. Moreover, the conservatism of the financial elite prevented the smooth introduction of bank notes.

The break with Belgium in 1830, partly based on justified concerns about unequal treatment under the new Kingdom, meant a severe blow to the King's ambitions. And it forced a complete reorientation of Dutch industrial plans, as Belgium with its industrial tradition, textiles, coal and iron ore, had been one of the first continental nations to imitate England's industrial revolution successfully. In 1805 it already had its first fully steam-powered cotton mill, long before the Netherlands, smuggled from England as no free export of these fancy machines was allowed until 1843 in an effort to limit foreign competition. This was followed in the 1820s by coke-powered blast furnaces and large metallurgical and machinery factories, with a key role for the Cockerill family, the largest European industrialists of their time.

For a while Dutch politics lost interest in industrialization again after the Belgium departure. It also had to face more pressing problems as the Netherlands was faced with a severe debt crisis again, Dfl 1.3 billion around 1830, worsening thereafter when coffee prices collapsed and the NHM could no longer bail out the King. In 1840 he stepped down after parliament did not approve his budget, and his son remained with much less power after a new constitution in 1848 and could no longer operate outside parliament.

A liberal regime was re-instated, controlled by a serious parliament for the first time with real political parties. These reflected a process of pillarization that was to characterize Dutch society for the next century, with each group having its own party and aligned (vertical) affiliations: socialists, liberals and various brands of Christianity. Again, the historical Dutch individualism controlled by group formation manifested itself, from water boards to political parties. The art of accommodating conflicting interests, also a historical product of a dispersed power structure, came in handy too at a time when social revolutions swept other European nations. And the liberals removed a conservative elite.

But this modernization of the State came one century late, as similar chances for reform were missed around 1750, with all the economic consequences described before. But with increasing State interference in the economy and in people's life, their desire for more democracy could no longer be ignored.

A drastic rationalization of the economy, tax structure, debt and public expenditure followed, surely necessary as the economy stagnated again in the 1840s, after a revival for 20 years. A mild mercantilism was replaced by a renewed focus on free trade, the obvious preference of what was still dominantly a trading nation.

### *Agriculture*

Agriculture had continued to prosper throughout the difficult times and became increasingly important again as industries declined. Even the government now started to take an interest in the only good sector the country seemed to have left and openly defended its butter and cheese when needed,

including other temporary protectionist measures. Land reclamations and improvements were taken up again as well, later followed by some agricultural education and a revival of the 3000 water boards. While the market for industrial crops declined, like hops, hemp and tobacco, new crops took their place: potato and finer vegetables like beans and peas. The consumption of coffee and tea kept on increasing and jenever replaced more beer.

Clover became increasingly important for feeding livestock and increasing the soil fertility with its nitrogen, thereby further reducing the need for fallow land and traditional crop rotation. It enabled farmers to keep more cattle and provide more manure for crops as well. Zero-grazing, stall feeding of cattle, also boosted manure output which reached unprecedented levels of 10.000 kg per cow per year.

Around 1810 the value of Dutch agricultural output was Dfl 200 million. Field crops and grains represented a third of this total, dairy a quarter, meat 20% and potatoes and industrial crops 10% each. Two third of agricultural imports consisted of grains, about Dfl 7 million, and dairy products represented almost the same share in exports of Dfl 18 million.

Good world market prices and a growing population, even in the Netherlands again after 1815, stimulated the agricultural sector further and the Netherlands strengthened its position as a net agricultural exporter ever since. Madder, oat, meat and cattle also were important export products, e.g. to the UK, whereas more domestic grains and potatoes replaced Baltic grain imports. Colonial products, coffee, tea, spices and sugar, remained important import products too.

Productivity was very high on the alluvial soils of the West, unusually so for Europe at the time and twice as high as in the rest of the country, as a result of better soils, much specialization and capital inputs. But agriculture in the East and the South, so much more dominant in its economic life than in the West, also started to pick up as a result of better transport and communications and the disappearance of the last feudal characteristics. The collective use of 'marken' (waste lands), which had deteriorated its fertility so much, was abolished under heavy protests from the peasants who saw their social security disappear. But higher butter prices helped to make their new private plots profitable as did new forestry.

Technical innovations started to revolutionize agriculture during this century. Fertilizer, known from the early 18<sup>th</sup> century in England, became introduced slowly, replacing salt, saltpeter and ash. This boosted crop yields, just as newly selected better seeds did and manure. Then labour saving mechanization was introduced, first on large farms in the UK and the US, especially after slavery was abolished, but slowly finding its way to the smaller farmers in the Netherlands too. Firstly, new ploughs and sickles were introduced, as well as other small equipment, then also larger reapers, harrows and threshers. Increasing yields, from manure and fertilizer, required more external labour and high grain prices also stimulated labour saving devices. The new mechanization led to drastic time and cost savings during the century, of up to 80%, and one hectare of grains could now be harvested in a little over one rather than five days.

Yields had already grown rapidly and one hectare could now feed seven people, contrary to one during the Middle Ages. No wonder towns could now also grow rapidly.

Improved transport and communications further stimulated agriculture in the Netherlands, also in the East and the South, and each area specialized in one or more crops or activities: hop in Altena and den Bosch, tobacco on the Veluwe, madder in Zeeland, flowers in Aalsmeer, orchards around Boskoop, butter in South and cheese in North Holland.

From 1850 onwards agriculture was no longer the main (male) occupation in the Netherlands, and grain prices started to stabilize at last. But food prices were no longer as important as in the past, and the historically fundamental relationship with population growth had ceased before. The potato disease of 1845 was the last subsistence crisis the country would have to face, causing even more specialization in livestock. A new era had at last arrived here too for the three million inhabitants of the Netherlands.

### *Liberalization*

A liberal wind was blowing in the world around 1850, with the English pushing free trade on to other countries after having repealed its own protection, i.e. the famous Corn and Navigation Laws. A transport and communications revolution caused an explosion of foreign trade, with the USA now also becoming a participant. Transaction costs declined drastically with the arrival of the steamships, trains and much better market information thanks to the telegraph. World trade exploded and grew more than 30 times within a century up to the First World War in 1914.

This was good news for a trading nation like the Netherlands, even though some liberalizations were resisted at first, as usual, especially in its colonies. Vested interests kept on defending the old order, against all odds. But at last the new technology was embraced and the number of steamers rose rapidly from only 12 in 1850 to 192 in 1900, leading to a drastic decline in ocean freight rates, even though some voices were heard in the sector up to the 1870s claiming that steam could never beat the wind in the end. Sea fishing also benefited from the changing environment, although it never again became as important as during the glorious past.

The ports of Amsterdam and Rotterdam were finally enlarged up to modern standards, with new and large openings to the sea, allowing for larger steamships and for the typical transit trade that was so dominant, e.g. throughput of mass goods in bulk to Germany from sea ships unto river ships. Dutch Rhine trade grew much under the influence of the liberalizations, boosting overall trade very much, even though its monopoly had been abolished. Its share of 40% of the total Rhine trade now represented much more than the 70% before, indicating the shortsightedness of much protection. Much trade was encouraged by the emerging textile and iron factories in the Ruhr area, requiring a lot of raw materials and intermediate goods from the UK through the Netherlands. The railway system now expanded rapidly as well, with some private assistance to the State: from 176 km in 1850 to 1419 in 1870. And a huge polder under Amsterdam was claimed from the sea at last, the Haarlemmermeer.

If anything at all, the services sector was probably the engine of growth for the Dutch economy. Reduced transport costs and trade margins with fast technical change led to a flourishing sector once again, benefiting the whole economy which now had become more united than ever. At least some Dutch entrepreneurs once again showed a capacity to take advantage of changing circumstances in the world.

Still, the economy was dominated by bankers, traders and farmers, not industrialists. The value of exports and imports doubled during the period 1848-1860, but most of this international trade were re-exported colonial goods, like sugar, coffee, indigo, tobacco and spices, with some processing, and agricultural products like butter, cheese, cattle, flax, madder, horses and oats. Domestic industrial goods like jenever were a minority, with net imports of textiles, metals and coal. The fact that so many goods were both imported and exported showed the absence of any serious industrialization. Transit trade was still the key word, and the UK, Belgium and Java were the main trading partners, with a growing importance for Germany.

Yet, the winds of change must have affected Dutch industrialists as well, for at last after 1850 mechanization accelerated and the new technology built around steam power was rapidly introduced. In 1836 there had only been 72 steam engines in the Netherlands, including ships and railways; peanuts compared to the 1000 in Belgium. In 1853 that number had risen to a mere 392, still very small compared to surrounding industrializing nations. Thereafter the speed of introduction finally increased, some kind of industrial take-off at last, as the share of steam engines rose from 5 to over 60% of total machinery during the period 1850-90. Whereas the total number of power implements in industries hardly increased, swinging around 6000, the amount of horse and wind driven mills more than halved, while steam engines rose from around 300 to 4000. The 50,000 horse power embedded in its industrial power capacity in 1850 became 80,000 in 1890.

This was but a meagre reflection of the more than doubling of that steam power in the world every decade, from 1.6 million hp in 1840 to over 60 million in 1890, but still this was an important

beginning. It was a time when the continent closed the gap with the UK, France, Germany and others before the Netherlands.

What took them so long?

### *Penalties of the Pioneer*

There are many reasons why the Netherlands was a late industrializer and why it took its entrepreneurs about a century before shaking off some kind of lethargy, stick-in-the-mud, a lack of innovativeness and risk taking.

Major historical reasons have already been touched upon before, such as the trade dominance of England and protection of other nations as well during the 18<sup>th</sup> century, taking away important export markets. A trading nation like the Netherlands was very dependent on these external markets, also its industries with few domestic raw materials, which often did little more than package imports before exporting them again. The domestic market was relatively small for industrial sales, as compared to the British, certainly when wealth and incomes declined later in the 18<sup>th</sup> century, also taking into account the fragmented nature of that market. Each town or province had its own taxes, rules, regulations and even measurements. And that domestic market was also not strongly linked to agricultural developments.

But it was not so that relations between trade and industry were much more profound in the UK than in the Netherlands. There were some linkages in the former too between the staple market, in sugar and tobacco, but just like in the Netherlands, British merchants were not industrialists, but rather bankers and landlords. With the exception of iron and copper, admittedly two crucial industries, British industrialists largely re-invested their own profits to get capital, at least until the banking sector developed to take care of their external needs and joint shareholding companies emerged.

The Dutch State had always refused to protect domestic industries, even in times of trouble, betting on its strong sectors, agriculture and services, which flourished under a relatively free trade regime. The central State had always been too weak to take firm action anyway, certainly in trying to go against vested interests of towns, traders, bankers and farmers. The Dutch federal structure was excellent when business boomed in the 17<sup>th</sup> century, with much freedom and little interference, but it lacked the power of the British State to promote and protect its economic interests when firm action was needed. At the time of British industrialization the whole structure of the Dutch State had collapsed, not really a conducive environment for industrial change or revival.

Even William I who tried, with the help of a growing State in a different time and environment, could not break through vested interests and create an industrial dynamism in the Netherlands. It happened in Belgium, then part of the Kingdom, but there was much more of an industrial tradition there as well as the necessary raw materials, coal and iron ore. Only after the break-up of that federation did the need for Dutch industrialization become stronger.

But even then did the relative wealth of the nation, its early modernization with high urbanization, literacy, low fertility and small family size, and the dominance of agriculture, trade and finance reduce its urgency if compared to neighbouring countries like France and Germany. Dutch bankers could still make more and easy money overseas, through government bonds, and flourishing agricultural exports even hampered an industrial take-off. It drew investment funds away from industry, and made export items like butter, cheese and meat expensive on the domestic market, thereby undermining people's purchasing power and the market for industrial goods. An appreciated Dutch guilder, caused by booming agricultural exports and capital export, continued to disturb the international competitiveness of Dutch industries. So paradoxically, its agricultural success frustrated its industrial revolution, with a welcome reaction after a lull in agricultural exports after 1860.

A highly commercialized agricultural sector also contributed to the relative absence of an impoverished rural proletariat as in other countries, eagerly searching for industrial work, no matter how poorly paid.

Finally, there was still the penalty to pay of the pioneer, moving at the technological frontier when it came to energy sources like wind, water and peat. Innovativeness is not high when the necessity for

change is not there, like in the UK when wood became scarce and coal had to be introduced. Energy was not a real problem in the Netherlands, even though coal from Newcastle had to complement its declining wood and peat sources from the 17<sup>th</sup> century onwards. And coal could produce four times as much energy as peat, for the same volume.

During the 18<sup>th</sup> century already 100,000 tons of coal were imported in an average year, especially for house warming and for processing industries like sugar refineries, beer breweries and distillers. Coal gradually supplied 50% of peat energy in total supply. But this coal was expensive, for transport reasons – on English ships - and because the States General and local authorities in their wisdom levied high excise duties on this valuable commodity, added to the British ones, giving Dutch industrialists a clear disadvantage as compared to their English competitors. Only the influx of inferior coal reduced prices, but with good quality coal prices in the Netherlands reached five to nine times the Newcastle price.

In the absence of much protection cheap English products flooded the Dutch markets in the early 19<sup>th</sup> century, another problem for a domestic revival.

In view of such differences and difficulties, and with relatively low wages in industrial areas like Twente in the East and Tilburg in the South, where the textile industry had fled away from high wages in the province of Holland, it hardly paid to introduce the new labour saving technology of steam powered mechanization. The situation was once again very different from the British one with its high wages and cheap coal, and closer to the rest of the continent where labour saving and fuel consuming technology was also not introduced overnight, apart from resistance from worried workers and conservative entrepreneurs. The new equipment that was gradually introduced in Dutch industries, almost all of which were small in size, remained to be man-, wind or horse driven for quite some time.

#### *Industrialization*

Only after 1850 with the new wind did enough factors change to make introduction of steam engines desirable. Railways, roads and central regulations stimulated domestic market unification and integration, thereby reducing the scale problems of many firms operating in a small market, especially after the State had solved its financial and debt problems and could devote more funds to infrastructure. The legal environment promoted competition and change, as manifested in the abolishment of the milling law in 1855, which had strongly regulated the grains market with its tax on flour and kept the bread price high and thereby wages too. The powerful cartel of bakers was broken at last, bread factories could suddenly emerge with steam powered flour mills, with large enough markets to make the new technology profitable. The declining bread price – 50% in 10 years - led to a surging demand for bread as well, to more purchasing power for industrial goods and a sharp rise in real wages at last, after two centuries of stagnation. Cheap bread and potatoes meant a lot for people who spent 70% of their wages – Dfl 1 per day at the time - on food.

Real wages would increase by 150% until 1900, also because of a less regressive tax structure and abolished excise duties on meat and on other basic needs. At last workers lives could improve after so much silent toleration of stagnation, with a reduction of the vast number of paupers that lived on charity or in workhouses. The first labour protests were then not far away either, with a first real strike in 1869 in shipbuilding. This is paradoxical as only then did real wage levels in the country return to the extremely high levels of the 14<sup>th</sup> and 15<sup>th</sup> century, before all its progress started.

A growing population also contributed to improved market prospects for industries, be it at a much lower rate than in England during its Industrial Revolution, as the three million people around 1850 became four million in 1890 and six in 1910, all this after a long stagnation. Mortality rates declined faster than birth rates. As a result of industrialization and productivity increases population growth would no longer be stopped by hunger or epidemics, as so often before in history. The Malthusian *Catch 22* of people and resources was finally broken. Productivity growth could at last be sustained, with rapid population growth, thanks to new technology, capital accumulation, organization and scale increases.

Towns also started to grow again after much de-urbanization in the 18<sup>th</sup> century and at last people started to move out of agriculture again, never to return.

In other industries competition also increased, forcing efficiency, change and innovation. Growing demand and larger markets now allowed for a rapid conquest by new steam powered machines and a larger scale of operation. The factory was born, drawing thousands of workers away from small workshops and homes.

This was 70 years after the first introduction of steam engines in the Netherlands, in drainage and in failed efforts at mechanical spinning of woolen and cotton. The engines and machines they run had improved much in the meantime, more flexible with a smaller size and heavily reduced operation costs, at last beating the wind as cheap energy source. People's prejudices against the new technology, smelling and dangerous with exploding boilers, also disappeared, as did the usual vested interests.

Textiles, once the strongest Dutch industry before its decline in the 18<sup>th</sup> century, now also started to be revived, mainly cotton in the East in Twente and woolen in the South around Tilburg. The first spinning machines had already been introduced in Tilburg in 1809, smuggled from Belgium, replacing many home workers at once, a huge impact in an area where half the labour force was engaged in textiles. Around 1820 there were 16 mechanical spinning mills in the city, mainly hand and water driven, responding to a growing demand for clothes. Weaving remained a home industry until later in the century, often sub-contracted by the manufacturer.

Further mechanization did not take place then in Tilburg, even though the city council allowed the first steam engine in 1827, not much more than a boiler, followed by Twente in 1830. Leiden had two steam engines also, but this did not help to revive its once flourishing textile industry. The steam engines were used to drive a number of new machines, replacing hands in all aspects of spinning, like cleaning and gathering of woolen and cotton.

In 1836 Tilburg had 12 of the 72 steam engines in the Netherlands, including steamships and railways. These were simple engines, still with cog-wheels rather than the later driving belts and strings. When these engines and machines improved, at much lower costs too, its introduction accelerated, with half of the 52 textile factories in Tilburg running on steam in 1857. Stork had introduced the first fully mechanized textile factory in Twente in 1854, followed by a cotton mill and a major machine-tool workshop in the 60s, almost a century after Lancashire.

In the 1870s handlooms in weaving were replaced by power looms. Larger factories started to emerge then, with more than 100 workers each, but with still many small specialized workshops in spinning, weaving, dyeing and carding. Only then could Dutch textiles compete with English again, which produce had flooded the Dutch market before and supplied over half of all cotton to the world mid-century. Dutch textile exports even resumed, to Japan, China, Singapore and Indonesia.

Economic growth did not immediately rise much after 1860, as this was not a real revolution, but a rather balanced growth in agriculture, trade and now also industries again, of an average 1.5 to 2%. Domestic goods industry now started to complement the colonial goods sector, the latter being affected by a gradual abolishment of the Culture System with its forced cultivation of crops. Pepper, indigo, cloves, tea, tobacco and sugar were successively liberated during the 1860s, as a result of the general wave of liberalization and growing criticism of the exploitative system, especially after a severe famine in 1850, with some protection of the land rights of Indonesian peasants. It was the time of Multatuli's famous novel *Max Havelaar*, a sharp attack on Dutch colonialism in Indonesia. The NHM was also further privatized, having to seek its own profits with less concern for general welfare issues, e.g. in coffee and tin. Private entrepreneurs from China and Europe could produce the desired crops cheaper than the government, an awareness that only slowly reached Dutch conservatives. The victory of liberals in Amsterdam politics in 1870 finally tipped the balance.

Rising wages and declining interest rates – freed at last in 1857 from its 5-6% ceiling – promoted the introduction of the new labour saving technology, within a growing domestic market. Steam engines were mainly introduced in the paper industry, textiles and later in the metal sector, shipbuilding and mining. Modernizing the important food processing sector was difficult and had to wait for new innovations later in the century, like pasteurization and refrigeration. Sewing machines accelerated the move from clothing to the factory, especially after ready-made clothes and large retailers were

emerging. The first – wooden – bicycle factory was erected in 1869 and new products like margarine also entered the market then. Cheaper transport and lower transaction costs enlarged markets and helped all sectors to overcome the earlier scale problems.

Large factories emerged in tobacco, cigars, shoes and later ready-made garments, with some new industries like beet sugar, potato-flour and straw-board. But in 1890 still 75% of the industrial labour force in the Netherlands was engaged in workshops with less than 10 workers, even though many of these small units now also were mechanized with steam power.

The structural change from agriculture to industry and services, now occurring in the rest of Europe, did not really take place in the Netherlands after 1860 due to its historical advantage. Hardly 40% of the Dutch workers were still in agriculture, much less than elsewhere, and 30% worked already in industries and services each. But this did not hurt productivity, as the industrial productivity of labour grew by almost 5% annually from 1860 to 1890, thereby tripling during the whole 19<sup>th</sup> century. The Dutch historical advantage in overall productivity, almost twice the British around 1700, was only lost after 1860, when also the US and Switzerland surpassed it, long after the UK.

Only after 1890 did the economy of the Netherlands change drastically, with the second Industrial revolution and the arrival of chemicals, electricity and diesel engines. The Dutch now started to make their own modern technology, being able to follow the new world leader, the USA, with the UK now suffering its own penalties of a pioneer. In 1870 it had still been the factory of Europe producing 70% of its mining output, 68% of its coal, 45% of metals and 43% of its utilities. It owned 30% of Europe's industry, with France and Germany 20% each and the Netherlands a mere 2%.

The share of agriculture in Dutch GDP peaked at 30% around 1870, while that of industries climbed back to 30% around 1900, similar to its 18<sup>th</sup> century share.

Then the consumer goods industry, with its flour, beer, tobacco, textiles, printing and diamonds lost its dominance to an emerging more heavy capital goods sector, with metal products, machines, construction, chemicals, electronics, ship and motor building, with new industries built around chemicals, petroleum and rubber. Gas and electrical motors made their entrance, but old industries continued to rely on steam-powered mechanization, with the country at last mining its own coal in the South in Limburg. Around 1910 domestic coal supplied 20% of the country's needs, when 22 million tons were imported, a huge jump from the 2 million in 1870. The Ruhr area in Germany had replaced Newcastle by then as main supplier. And 15 million tons were exported, mainly to Belgium. By then the country also produced its own steel, easier to handle than iron.

Contrary to some ideas at the time, electricity did not contribute to a return to the small workshops, but fastened the move to the factory for many industries. In any case, workshops should not be idealised, as life for the workers could be quite hard there too.

The famous (partly) Dutch multinationals, like Philips, Unilever, Shell, DSM and Akzo also originated from this period, some soon internationalizing their production with overseas branches, especially when protection re-emerged in the world. The Dutch picked up their old habit of exporting capital again, be it with serious ups and downs.

Industries returned to towns with some clustering of sectors in particular areas. Specialisation within sectors also increased, with separate leather and shoes production, painting and many separate chemical industries which hardly existed around 1870, and many new products, like artificial fibres. It was the arrival of brands in sales, companies attaching names to their goods to attract customers. A lull in the patent law system after 1860 had allowed Dutch entrepreneurs to freely copy new ideas, only later to be complemented by own innovations.

In general, Dutch industry did well without protection until the First World War in 1914. A gradual process of concentration took place, as the number of workers in medium- and large firms rose from 20% in 1860 to 44% in 1909, with even 80% in textiles working in firms with more than 10 employees. The share of industrial workers in the total labour force surpassed 30% after the turn of the century, reaching almost 40% in 1920. Like everywhere in Western Europe the share of working people



depending on wages had come a long way since the Middle Ages: increases from 25% around 1500 to 75% now.

Increasing scale of operations and concentration were helped by the growth of joint-stock companies and by other legal and financial changes. Usury was no longer prohibited, the formation of companies was simplified, foreign companies were allowed in, commercial laws were adapted to the era of industrial capitalism and there was much monetary harmonization such as the introduction of the Golden standard everywhere after 1870.

### *Social Change*

The new industrialisation led to marked social changes in Dutch society. The growth of the middle class was accompanied by an increased social mobility and by a more receptive environment of the technological and industrial changes, like in the UK much earlier. And the continuous increase in real wages contributed to improved hygiene, safe drinking water, decline of child mortality and rapid rise of life expectancy in a short time: from 30 to 52 years from 1845-1905. Men and women got more freedom in choosing their life, postponed the marriage age and reduced the number of children. Female participation in labour then also declined, as men were supposed to take care of their families, and could also do so for the first time, while women took care of the children.

But rising real wages could not hide the fact that labour conditions were difficult for the majority of the working class. The burden of labour was heavy in general and working hours were long, at least 12 hours a day for men, with heavy duties for women and children too. The arrival of labour unions around 1870, as late as Dutch industrialisation, meant a new era for social relationships in the Netherlands too. Strikes became a normal fact of life, especially after their formal legitimacy in 1872, with much action by the best paid and first organised industrial workers: typographers, printers and diamond cutters. Pillarization also ruled in labour organisation, with socialists and Christians having their own unions. The railway strike of 1903 changed labour relations fundamentally, as trade unions could no longer be ignored thereafter. By that time employers also had started their first organisation.

Child labour was formally abolished in 1873 and new labour laws were rapidly introduced after a report of a parliamentary committee shocked the nation in 1887. A new labour law was introduced in 1889, a safety one in 1895 and an accidents law in 1901. The latter meant the first measure of social security, an insurance against work accidents, with 70% of the wage paid. Allowance for sick leave only followed in 1930, after failed efforts in 1913. Shorter working hours came into effect in 1911, for young workers and women at first, with a maximum of 10 a day, with men only benefiting gradually from sectoral negotiations when labour contracts became more normal.

A serious income tax came into being in 1892 at last, with the poor exempted, almost two centuries after the first aborted efforts. Around 1900 it already represented 13% of all taxes and in 1918 50%. Duties and property tax became relatively less important.

Christian political parties replaced the liberals in power in 1878, after an intense struggle to establish their own schools, and they more or less controlled Dutch politics until recently. The arrival of the first socialist in parliament in 1888 did not change much in this respect, ten years after the Dutch socialists had formally organised themselves.

Other emancipatory movements came up during that time as well, with a growing awareness of citizens and workers, new collective action, civil society and interest group formation. In 1870 the first girl was admitted in secondary school, later followed by female entrance to university. Other social policies followed, yet government expenditure remained fairly low, i.e. only 8% of GDP in 1913. Voting rights were enlarged to all adults in 1917, where there had only been 0.1 million voters on 3.5 million people in 1870.

### *Agriculture*

Dutch agriculture lived its finest moments during the period 1850-70 when farmers were supposed to get rich 'while sleeping' and prices moved upwards again. It had always been operating in a liberal environment, so that did not change much. But government support in education, land improvements and tax cuts certainly proved useful, having grown with the more centralised State after the French

occupation. A kind of agrarian policy was slowly emerging, contrary to the earlier ad hoc measurements, with new laws too. The first agrarian organisations were also created after 1850, interest groups to lobby for the sector.

The sea clay areas in the West were still much better off than the river clay ones, not to mention the sandy soils eastwards, but better prices for dairy products also helped there. But these areas missed the large intensification that was to affect the sea clay zones, with Groningen in the North becoming a very dynamic arable zone, even doubling grain yields. Its owners invested in their own land, in drainage and in rapid mechanisation. Their farms were also larger than on the sandy soils where small family units continued to dominate.

Dutch agricultural exports benefited much from cheaper transport, steamship and railways, and horticulture recovered from its stagnation as a result of the past de-urbanisation. New growth of cities and of real wages stimulated consumption of fruits and vegetables much, and its exports grew fastest, including flowers, from Dfl 0.7 million in 1850 to Dfl 5.8 million in 1870, by 800%. By 1920 that value would be Dfl 100 million even, accompanied by a large shift of labour to this highly intensive sector and by a rise in greenhouses. The UK remained the main export market, followed by Belgium and Germany, with a small crisis as a result of cheating with contaminated onions. Around 1900 more than 100 million kg of vegetables were exported.

Livestock continued to do very well too, with half the land area already devoted to pasture and grassland. Cattle, sheep, pigs and poultry all contributed their share, with growing export of cattle and meat too, to the UK, Germany and Belgium. Butter and cheese exports were also very important, but there also some cheating hurt the Dutch image. Already highly productive cows added another 1000 litres a year to the 3000 they were producing early in the century. While fertilizer and fodder were imported, horticulture and dairy were exported.

New cultivation methods, in rows without fallow, fertilizer, drainage pipes and better ploughs, cutters and labour-saving sowing machines, weeders, grassmowers and threshers all changed the nature of the game. Productivity boomed as never before, with adding value the key concern, and mechanisation neutralised the wage increases that might have resulted from labour leaving towards the factory. The boom in agriculture and its exports also slowed down the outflow of labour to industry and services, like in the UK and elsewhere, reducing the pressure to mechanise as well. The first tractors would only arrive in 1913.

Grain yields reached two tonnes per hectare around 1870, requiring less labour inputs all the time, and other crops like flax and potatoes were also doing very well. Only madder received a severe blow from a synthetic paint, but the farmers in Zeeland rapidly switched to sugar beets. A third of the sea clay soils remained under grains, more so in the North than in the West and also more in winter than in summer, with the rest divided amongst root crops, industrial crops, pulses and fodder crops, close to 10% of the land each depending on the area.

Increasing imports of cheap grain from the US, Canada and Australia, thanks to the steamships, kept grain prices low and induced a shift to more remunerable activities like horticulture and livestock. Wheat lost about a third of its market value during the century, which helped to keep industrial wages low too and contributed largely to the long-term improvement of levels of living all over Europe. But in the end this cheap food invasion, multiplying by ten in ten years, threatened to kill the free trade system and caused a severe agrarian crisis after 1875, also in the Netherlands. It was a crop crisis in particular, grains, not so much livestock or horticulture.

The crisis led to revolutionary changes in agriculture, especially since the government did not want to relapse immediately into protection, a course of action it had never followed with respect to agriculture. A kind of 'green revolution' occurred with much rationalization, intensification and group responses from farmers through co-operatives for inputs, marketing, savings, insurance and credit. The first Dutch co-operative was created in 1877, rightly called Well Understood Own Interest, as farmers

realised their interest in influencing market outcomes and reducing their dependence on shopkeepers and traders who delivered their fertilizer on credit and bought their output. Moreover, they wanted the government to control the quality of their improved seeds and fertilizer, as this was often of dubious quality.

Dairy and credit co-operatives turned out to become most successful, and steam drainage, pump stations and chemical fertilizer created much more crop security and a completely new approach to manuring. Farmers' cooperatives also ventured in industries: potato mix, straw carton and beet sugar. Agriculture had become a business, an industry, and more was to follow in the 20<sup>th</sup> century. Small farmers started to benefit from scale advantages as a result of co-operatives, for inputs and output, and were later helped by auctions in flowers, fruits and vegetables. Within 30 years over half of all Dutch farmers (with more than a hectare) were organised one way or the other, more so in the East than in the West.

The new agricultural science also supported farmers with their research on plant breeding and extension, providing the new seed varieties that could take advantage of the higher nutrients. Dutch farmers became the most intensive users of (chemical) fertilizer.

At last the structural transformation of labour out of agriculture could also take place in the Netherlands, slower and a bit later than elsewhere, as other countries with the exception of the UK had started from a much higher level. Around 30% still worked in it at the turn of the century, a share declining to 20% only after the Second World War when at last the absolute number of agricultural workers started to decline. The 30% of workers in agriculture contributed about 20% to the national income, a sign of less productivity than in industry and services despite the relatively high levels in Dutch agriculture.

In the West of the country agricultural employment shares had long declined to below 20%, for historical reasons, but industrialization everywhere had an equalizing effect on regional differences.

#### *Open Economy*

The liberal world economy started to shake after the agrarian depression of the 1880s. It was the first global crisis that was really felt inside the Netherlands, whilst earlier and smaller ones in the 1850s and 60s still had paled before domestic cholera and rinderpest epidemics. All countries now followed Germany's initiative to start a new wave of protection, thereby reducing the reshaping of the international division of labour towards factories in Western Europe and farms elsewhere.

As a trading nation the Netherlands suffered, continuing to import more goods than export and compensating this through capital exports and net shipping revenues. The fact that the country imported more or less the same goods it exported, grains, iron (products), yarn, kina, coffee and sugar, showed the transit nature of its trade, dominated by farmers and traders, not a true industrial nation yet. But more industrialisation also meant more trade for a country poor in raw materials, with a gradually changing trade composition, yet with much higher volumes: the tonnage from ships in its ports went up from 7 million m<sup>3</sup> in 1876 to 40 million m<sup>3</sup> in 1910. Dutch exports in 1900 were Dfl 1.7 billion and its imports Dfl 2 billion. Rotterdam became one of the largest ports in the world, thanks to its transit trade to and from the Ruhr area in Germany.

Foreign trade benefited much from the arrival of tankers and of the telephone and the radiotelegraph after 1881. And although the share of exports and imports were much smaller than they are today, the Netherlands continued to be a very open economy until the Great Depression in 1930. With a short exception during the reign of King William I it had always been one of the least protected economies in the world, even when its own economic sectors suffered. In that sense it was more dogmatic than the pragmatic British, with negative effects on its industrialisation, even though its position at the technical frontier did not require much protection for 'infant' industries.

Dutch foreign investments kept going up and down, with much investment in East-Indie, in oil, mines, sugar and railways and ports, and in South-Africa, later followed by the USA too. At the turn of the century these investments were 1.75 times the GDP, a remarkable amount. Just before the First World War foreign investments were estimated at Dfl 4 billion, after which a lot was lost again before the Netherlands re-emerged as the major capital exporter it still is today.

Its own brand of imperialism after 1880, when European powers again divided zones of influence in the world, helped its economy. Colonial enterprise in East-Indie (Indonesia) continued to be profitable, as figures from 1926 show: In that year Dfl 187 million was paid from there as dividend on Dutch agrarian companies, Dfl 132 million on other firms, Dfl 40 million on salaries and Dfl 93 million on pensions and other allowances.

Banks were not that important yet as they would become in the 20<sup>th</sup> century, under the influence of US trade practices, concentration in industries, new laws and joint-stock companies. But a financial revolution was underway, with new gold, easy money, low interest rates, a credit explosion fuelled by the acceptance of paper money by Central banks and an opening up of money markets to a large number of people. Banks expanded their networks and new investment banks were created. A rapid growth of savings promoted capital accumulation in the Netherlands as well: In 1860 there were 136 savings banks with deposits of Dfl 5.5m and in 1900 252 of such banks with deposits of Dfl 164 million already.

And so a century came to an end that saw an Industrial Revolution in the Netherlands at last too, after much hesitation implicitly related to its prior prosperity. While its population had increased from two to five million, its national income grew from Dfl 350 million to Dfl 1,800 million during the 19<sup>th</sup> century. In real terms (constant 1960 dollars) its per capita income had increased from USD 270 in 1830 to USD 740 in 1913, or in guilders of 1900 the per capita income had increased from Dfl 180 in 1820 to Dfl 380 in 1900. This represents an impressive annual increase of one percent, contrasting very well with the actual wage freeze during the preceding two centuries. It was the beginning of a historically unprecedented growth spurt by the rich nations which saw average incomes rise 14 times including the 20<sup>th</sup> century, despite a fivefold increase in population. People's life expectancy had doubled by then and its working time halved.

It is only then as a result of the Industrial Revolution that real incomes of average Dutch people put a clear distance between earlier peaks of the years 1700 and of 1500, even though its neighbours and the USA were richer then.

And of course much of its wealth was unequally distributed. Scarce data indicate that around 1910 80% of all Dutch taxpayers earned less than Dfl 1500, and half of those in between Dfl 600 and 800. A quarter of the population lived in a one room house and a third in a two room house. As said before, people had to work very hard for that. Fortunately, an era of equalizing incomes was on its way, lasting for almost the whole century but initiated by dramatic circumstances.

## 5 The Present

### *Preamble*

The 20th century turned out to be a hectic period, also economically, with some dramatic nadirs: Two world wars and a great Depression. All rich nations suffered a lot, including the Netherlands. Yet, its neutrality during the first war (1914-18) helped to reduce the negative implications of the breakdown in foreign trade and investment, especially with its main trading partner Germany. And the effects of the great depression of the 1930s were also less than elsewhere, because of its large agricultural sector which continued to keep up economic activities, though not exports. This sector did suffer, however, and was now for the first time saved through direct government support and protection, a new way of operating that the government still had to learn after so many centuries of almost dogmatic free trade. Distressed industries also benefited from this, but the subsequent second war (1940-45) hurt the Dutch economy almost more than any other country: It halved its national income.

After 1945 the Dutch first started to produce babies, creating a baby boom that put its mark on the rest of the century. As usual, this population growth helped to revitalize the economy, the 50% growth in population during the period 1950-80 being more than elsewhere. A clear move to larger towns illustrated renewed urbanisation as well.

But the task of rebuilding the economy was difficult at first, despite the assistance from the US Marshall Aid, with success only visible after 1950 when its traditional involvement with the world market was restored. Other countries then also were able to meet new demands that had been delayed by the war.

The Netherlands had lost its main colony in the meantime, Indonesia, reducing the small nation at last to its normal size, a trend that at first was met with visible fear by its parliamentarians. An abnormal interest in development aid was one of its outcomes, a way for a small nation still to be great, and a good compromise between the two souls in each Dutchman's breast: merchant and vicar.

Public expenditure rose rapidly, both absolutely and relatively, and reached 40% of GDP in 1980, after having been close to 10 and 20% earlier in the century. In good Keynesian style the government now intervened directly in the economy, promoting economic growth and employment, and supporting industries where needed. Its investments went up ten times during the period 1950-70, private ones seven times, another golden era for the Dutch economy. Education received much attention too, wisely foreseeing the knowledge economy to be, and social security took 20% of GDP in 1970, against only 8% in 1950. Old-age pensions, unemployment, disability and disease insurance schemes were very generous.

Economic growth averaged 5% during this period, the economy cleverly taking advantage of doubling world trade. Dutch exports and imports more than doubled during these 20 years, Real per capita incomes also doubled and looking backwards these had grown by 1.6% on average since 1900, with many ups and downs. The income distribution also continued its improvement throughout the century, partly as a by-product of the two wars, at least until 1980.

The service sector grew most at the time, public and private, soon occupying half of the Dutch labour force, but the industrialisation process was most spectacular. A veritable technological explosion occurred in the 1960s, led by the chemical and electrical industry, with the general and industrial labour productivity augmenting by 5% each year, a unique achievement. A highly diversified industrial sector took shape, with processed food and beverages, tobacco, machinery, metal products, transport equipment (ships) and printed materials. Heavy industries remained relatively small, however, and the economy became very energy-intensive. Fortunately, a new 'peat' was discovered in the late 1950s: giant natural gas fields in the north of the country near Groningen. This allowed the country to close its coal mines in the South, the steam engine having long been replaced by the electrical one anyway.

The Netherlands became one of the largest producers and exporters of gas in the world, so much so that a new disease was invented, despite a reasonable management of the huge revenues: the Dutch disease. This meant that a natural resource like gas caused such an appreciation of the currency when

exported, that other exports suffered for becoming less competitive as a result. Huge capital exports in the 18<sup>th</sup> century had caused a similar effect at the time. Now the export of basic manufactures, machinery and food products, like butter, cheese, eggs, meat fruits and vegetables got hurt. Rising wages also promoted a process towards capital intensification in industries, which could not prevent, however, the end of the boom during the 1970s.

A severe oil crisis in 1973 marked the turnaround of the economy, which continued to be vulnerable to external shocks, like stagnating world trade and a breakdown of the financial system that had been created after the Second World War at Bretton Woods. The US dollar lost its stabilizing effect. High cost of production, heavy taxation – with a dominant income tax at last - reaching 30% of the net national income, squeezed profits and the Dutch disease all started to hurt industries throughout the 1970s and 80s.

Some industries then almost disappeared, like textiles and shipbuilding, on their way to low wage countries, and industrial employment nosedived, still having employed 40% of the labour force in 1960. Fortunately, services picked up again, mainly public ones like health and education, soon employing more than 60% of all working people.

A famous polder model saved the economy in the 1980s, leading to a leaner Welfare State. Ever since the creation of the Water Boards in the Middle Ages the Dutch had learnt to practice the habit of talking and talking, negotiating and compromising. A consensus was usually sought to accommodate conflicting interests, by groups representing individuals rather than by a central authority. Disappearing social and religious pillars now had to be replaced by the State, which entered into a lasting agreement with trade unions to moderate wage demands in exchange for restrained public finance. The overburdened Welfare system was rationalised in the 1990s without much protest.

Agriculture also revived after the war, with productivity growing like never before, thanks to economies of scale, industrialised agro-business and mechanisation. Thousands of tractors, grass mowers, fertilizer sprinklers, sowers, sprayers and threshers worked the land that hardly saw any of these at the beginning of the century. Only then were horses gradually replaced by tractors, saving a lot of land for other purposes as well, just as imported fodder would do later. Yields kept on increasing, with new varieties too, but it was mainly due to the labour-saving devices that the most intensive agriculture in Europe also became by far the most productive, especially in horticulture and intensive livestock. And like elsewhere in the world, the time required for a ton of wheat had dropped from 300 man-hours in 1900 to 1.5 after 1950. That helped to explain that fewer and fewer people worked in the sector, less than 5% now, 0.25 million only. And most of these farmers were now well organised, as most of the dairy and horticultural products were sold through co-operatives, as well as much handling of fertilizer, savings and credit. Co-operatives seemed to suit individualistic Dutch farmers quite well: fairly loose groups of individuals. Many farmers are linked to the Green Front that protects their interests also politically, a federation of their own organisations.

Cheap gas promoted a fertilizer industry and an expansion of greenhouses, with more than 3000 ha under glass against 500 at the beginning of the century. Research, extension and education worked hand in hand, together with industry, to remain on top of the world, and the good location near a densely populated Ruhr area helped sales. Yet, the limits of too much intensity became also visible in the 1970s with serious environmental problems around surpluses of manure and minerals.

Expensive surpluses were built up behind highly protective walls of a common European market, which had grown serious after a hesitant start around coal and steel in the early 1950s. It is an economic union now and there has also been quite some progress towards political harmonization. The common agricultural policy led to a structural overproduction of grains, milk products, beef and veal, surpluses of which were dumped on the world market at the expense of small producers in Africa and Asia mainly. It turned Europe from a major importer into a major exporter of these products, through import barriers, production quota, guaranteed prices and export subsidies. Subsidizing Europe's farmers proved to be very expensive, for governments and for consumers paying higher prices. High costs, new EU members, and international trade rounds (Uruguay, WTO, Doha) to

rationalize the system and return to some freedom for trade, also benefiting African farmers, changed the system, with less protection and subsidies and more focus on rural development at home.

The Netherlands has always been a net contributor to the EU system, with for instance a contribution of Euro 2.5 billion in 2006 to the total EU agricultural budget of Euro 50 billion, with receipts from that same system amounting to Euro 1.2 billion. Most contributions went to large farmers and agribusiness, like dairy co-operatives Campina and Friesland Coberco, food giant Nestlé and starch co-operative Avebe, each receiving millions every year.

Yet, two-third of Dutch agriculture, in horticulture and intensive livestock, continued to operate without actual protection or support, apart from indirect government activities in education and export promotion, like credit insurance etc. However, extension services have been privatised in the 1990s.

The European Union has been good for the Dutch economy, which absorbs  $\frac{3}{4}$  of its exports and is home to half of its imports. The Dutch are the third exporter of agricultural produce in the world, mainly processed items from agribusiness. They are the largest exporter of flowers, bulbs and of seeds, again mainly within Europe.

The common Euro replaced the Dutch guilder in 2002, at an exchange rate of 2.2:1.

#### *The Present Economy*

The small country of farmers and traders along the North Sea has come a long way since building its dikes from the year 1000 onwards. Yet, it lost most of its farmers in the process, not to mention the fishermen who started the development process by crossing the seas. There are not even 100,000 farmers left, excluding (family) workers, and its number is decreasing by 3% every year. Moreover, a great number of remaining farmers is over 50 years of age.

Of traders there are so much more, however, for if one interprets that in a broad sense, including merchants, intermediaries, brokers, commissioners, internal traders etc, then 30% of the working population is employed in the sector: 1.8 million people. Even in a narrow sense there would be almost a million traders.

The Netherlands is still a major distribution centre in the world, thanks to its strategic location near the sea and major rivers, its highly productive labour force, trading mentality and institutions, low transaction costs, co-operating government and open economy. To some extent little has changed since the staple market in the 16<sup>th</sup> century, as still 40% of its exports are re-exports, earlier imported goods with little processing. Many of the same items figure largely in both imports and exports: food, beverages, other agricultural products, tobacco, chemicals, fuels, electro-technical products, machines and transport equipment. Only computers from China are an important item by themselves.

The following box presents some of the key data of the present economy (2005-07).

## **Some Facts about the Dutch economy 2005-2007**

**Population 16.5 million**

**Population Growth 0.5% p.a.**

**Labour Force 7 million, 57% men, 43% women**

**working in agriculture 3%, in industries 13 %, in construction 7 %, in services 73 %; unemployed 4%  
15% of population aged 15-64 claim social benefits (over 50% disability benefits)**

**National Income (Gross Domestic Product) Euro 500 billion**

**Economic growth 1995-2005 2.75% p.a.**

**Income per capita Euro 30,000**

**Real individual disposable income growth 1995-07 10%; purchasing power 2007 E 24,000**

**Share of officially poor households 10%**

**Share of consumption for poorest 10% is 3%, for richest 10% it is 25%**

**1.1 Total Private Consumption Euro 250 billion**

**Total Private Assets (mainly housing) Euro 1,200 billion**

**Economic sector contribution to GDP:**

**agriculture and fisheries 2%, industries 14%, financial and business services 27%, trade (and bars/restaurants) 15%, government 12%, legal and economic services 4%, care and other (social services) 13%**

**Key economic sectors:**

**Agriculture: 80,000 businesses, of which 12,000 in crops, 15,000 in horticulture (incl. flowers) and the others in livestock (broad, incl. poultry)**

**Industries: Food and Beverages (value production Euro 50 billion, employment 0.135 million people);  
Textiles, Paper and Furniture (value E 28bn; employment 0.23mn); (Farma) Chemistry (value E 50bn;  
employment 0.068mn); Metal/synthetic products (value E 32bn; employment 0.15mn); Hightech systems  
(machines, health, transport) (value E 52bn, employment 0.22mn).**

**Services: Infrastructure (energy, water, construction) (value E 103bn, employment 0.4mn); Transport,  
post and telecom (value E 74bn; employment 0.45mn); Financial services (value E 62bn, employment  
0.29mn); ICT and business services (value E 69bn, employment 0.67mn); Media, cultural and creative  
(value E 32bn, employment 0.23mn)**

**Government Expenditure 46% of GDP**

**of which on social security E 57bn, Care(health) E 55bn, Education 35bn, National Debt E 15bn,  
Defence E 8bn, Foreign Aid E 5bn**

**Tax 25% GDP, social contributions 15% GDP**

**Exports 67% GDP; Imports 60%**

**Social Indicators:**

**Life Expectancy: 82 women, 77 men**

**Education: ¾ of age-group 30-40 years completed at least secondary education**

**¼ of age-group 15-65 completed higher education**



Quite a few large multinational corporations have their head office or European centre in the Netherlands, such as huge refineries like Exxon, Texaco and BP, as well as Sony, Nissan, Cisco and Starbucks. But the country also owns some of these itself, alone or with the UK, like the oil giant Shell, Unilever (foods), Philips, Heineken, Akzo (Nobel; chemicals), Corus (steel), DSM (chemicals), retailer Ahold and the banks ABN (Fortis) and ING. Most of the turnover of these Dutch multinationals of over Euro 10 billion each at least is made abroad, in the US and Europe, with only 10 to 20% at home (except the banks and DSM), and equally few staff are employed inside the country.

The dominance of these huge multinationals, Dutch and non-Dutch, in the Dutch economy is striking: They control 80% of its foreign trade, both exports and imports, half of this within the companies themselves.

The Dutch have always been an important capital exporter and its direct foreign investments now fluctuate around Euro 25 billion, again mainly in Europe and the US, with some increase in Asia. Foreign companies invest roughly the same in the Netherlands, still an attractive location. Services become ever more important in its foreign investments too, in trade, finance, transport and communications, at the expense of industrial ones except agro-foods.

The economy itself is completely dominated by services: 70 to 80% of the working population and the same contribution to the national income. Key service sectors are infrastructure, transport, financial and business services. Despite growing exports the domestic market remains crucial for these services, dependent on location factors and benefiting from more sub-contracting.

The Dutch may be working mainly in services, but for their wealth they rely heavily on industrial exports, from productive sectors like food and beverages, chemistry, machines, metal, transport goods and synthetic products. As traditional sectors with much manual labour are lost to low wage countries, as in consumer goods, new industries arise with much design and high technology, a sign of the new knowledge economy. If one cannot be cheap anymore, one must at least be smart and add as much value as possible in production. The Netherlands is still among the ten most competitive countries in the world.

#### *Luctor et Emergo?*

Without water no Dutch. Their identity has been historically determined by their struggle with the water, and so has their wealth. A constant alertness for survival can make one very entrepreneurial. It all started with the dikes after the year 1000, but it has never ended. At times control weakened, usually when an economic crisis did not allow for enough maintenance, and then nature hit back. The last time this happened was in 1953 when Zeeland and parts of Holland were completely flooded and 2000 people perished. The famous Delta works that followed, huge sophisticated dikes and seawalls, illustrated once again Dutch excellence in water control and flood protection.

But the struggle is not over yet, if it ever will. As a result of climate change the land has to be protected against rising sea levels again, one meter at least in this century, especially the Western half that is below sea level already. Higher and 'unbreakable' dikes are needed, more sand along the beaches as well as more control of the larger fluctuations of river water expected in summer (drier) and winter (fuller). Gradually declining soils will also have to be protected. All this is expected to cost Euro 1.5 billion p.a., slightly more than the finger in the dike by the imaginary boy on wooden shoes, Hansje Brinker, but not even 1% of GDP and certainly a small insurance premium to safeguard interests worth Euro 2,000 billion. A new Delta law to prepare the ground financially and institutionally is already expected in 2010. Therefore, the Dutch are likely once again to struggle and come up, *luctor et emergo*, as the lion in Zealand's arms, provided sea levels will not rise more dramatically.

As the shortage of raw materials and their courage once drove the Dutch to the sea, so will this new struggle again promote the innovations that are required to keep this small nation wealthy. And the traditional commercial spirit will be needed to keep the economy alive and kicking in the face of much international competition, especially from emerging Asian countries.

Over 16 million people have to make a living on this former swamp, partly at least, which has no more than 40,000 square kilometres, having added artificially – like the Zuiderzee – just the 10% it lost naturally during its history. With one of the highest population densities in the world, almost 500 per sq. km, it is getting quite crowded.

And that is not all, for not only is this the only country in the world that has more bikes than people, almost 20 million, next to seven million cars, Dutch people also own around 30 million pet animals. Fortunately, two third of these swim in small aquaria at home, but the three million cats and two million dogs don't. On top of this there is a permanent livestock of around 150 million, chick(en)s, pigs, cows, calves and sheep, with many more slaughtered each year, often crowded on tiny parts of the 2.5 million remaining agricultural land. No wonder, traffic jams are a pain in the neck in this river delta, with entrepreneurs complaining about a permanent 'attainability infarct'.

The composition of the population is also changing rapidly, with already 20% recent migrants, mostly non-Western from Turkey, Morocco and Surinam, a former colony, and heavily concentrated in the large cities. Never having been prepared adequately for this, the Netherlands officially remaining a non-migrant country until the 1980s, with a stifling of each debate around the issue until very recently, the integration of people from different cultures remains a headache for Dutch society. The historical reputation for openness to foreigners has suffered as a result. Too many migrants also lack the skills to participate fully in the economy and live on social benefits.

Yet, the country needs new labour inputs, skilled ones, as its population is greying rapidly, the baby boom generation just reaching their retirement age in 2010, threatening the fiscal sustainability by rapidly increasing ageing-related costs, such as (health) care and pensions. Already 2.6 million people are 65 and older, with a peak of 4.7 million expected in 2037. Not enough babies are being produced now, and the average family size has dropped from three to two children. More women work now and more get pregnant at a later age.

Stagnation of the working population is neutralised somewhat by a higher labour participation, mainly by new female entrants. But their preference for part-time jobs contributes to the fact that the Dutch work less than their neighbours: 1350 hours per year as compared to an average 1500 for rich countries. Some groups participate little in the economy, like lone parents, low-skilled women, partially disabled and inactive migrants.

Structural labour shortages may lead to wage pressures and ever smaller contributions to economic growth from employment, historically an important source as was shown before.

A rather jobless economic growth may be expected, unless enough skilled migrants are attracted, putting high demands on labour-saving technological progress. Labour productivity in the Netherlands is still amongst the highest in the world, the nation hardly losing its century old advantage over others. But its growth is less impressive than that of its main competitors, largely as a result of too many traditional industries still. There is no more employment growth in highly productive industrial sectors, and not much even in less productive services. Therefore, much creativity and smartness will be needed to keep up productivity growth and thereby people's incomes.

The economic outlook for the Netherlands is fairly bright, despite temporary clouds. In a world where image is becoming ever more important as a tool for competition, next to prices, the Dutch score well with their image of excellence in land and water, agribusiness – food and flowers - and water management. Creative industries - *Dutch Design* - are also becoming part of the exportable knowledge cluster, industrial and art, as are high-tech systems, materials, chemistry and environmental issues, such as sustainability in production and alternative energy. The windmills that once turned swamps into polders are now returning in a new shape to generate electricity, smartness in comparative advantage. Even the historically important but now distressed textile and metals sectors may survive partly as a result of new specialisation, design and high technology. Such a knowledge intensive shift in industry is a useful complement to services, material versus immaterial, concrete versus abstract.

Its good location, business climate, high value goods, services and qualified people keeps the Netherlands attractive as a distribution centre, also for foreign companies, despite increased competition in a globalised world; and good for transit trade and processing imported raw materials.

Farming itself may be a dying occupation despite all the historical benefits, except for a few highly specialised and intensive sectors, like flowers and seeds. Water, rail and air connections are good, but roads could be better. Traders will be traders, but good technicians may have to be imported in future, as is already happening from Eastern Europe.

Yet, an open economy like the Dutch earning so much of its wealth abroad will always remain vulnerable to external shocks, like the financial crisis of 2007-08. There have always been such uncertainties, as even the first joint-stock company in the world, the Dutch East-Indie Company (VOC), occasionally suffered from short selling, a now again forbidden type of speculation in (future) shares. The extent to which the government had to bail out the banks in late 2008 illustrates once again the historical importance of the Dutch financial and foreign sectors.

The Dutch are still getting richer and purchasing power for an individual has now reached Euro 25,000. Of course, there are still income and wealth differences, as more double-earning households join the ranks of the rich while a fairly stable 10% of households remain officially poor. About half of these are chronic poor, the others regularly moving above and below the poverty line.

On average, men still earn more than women, indigenous people more than migrants, workers more than unemployed, self-employed more than employed and double-earners without children more than those with children. A handful of people own much of the nation's wealth, although more than 50% of the Dutch now live in their own house.

The times have long gone when 'the only music Dutchmen enjoyed was the tinkling of coins and of church bells', as foreigners used to say. People are slowly moving beyond money, and religion too for that matter, and health in particular has become an important issue. Thanks to its wealth the Dutch have become much healthier than before, especially after the hygienic transition in the 19<sup>th</sup> century, and that improved health also contributed to more wealth in the 20<sup>th</sup> century.

The Dutch get older and more successfully so, with longevity still increasing, be it with more vulnerability to diseases and less difference between men and women.

Education levels keep on rising too, girls catch up with boys and migrants with indigenous inhabitants, and more people also participate in work. Most Dutch are now also connected to the Internet and own computers and mobile phones, even the very young ones.

About 80% of the Dutch claim to be healthy and happy, a relatively high percentage compared to other rich countries, according to public opinion polls which tend to paint a rather rosy picture. And while physical well-being has certainly gone up, questions remain about not so well documented immaterial aspects of life.

A quarter of the Dutch population is supposed to suffer from mental health disorders on and off, with women and older people over-represented. Statistics about mental disorders mean little, as only one fifth of the depressed apparently are registered in view of the one million people taking anti-depressants. Two million people suffer from chronic headaches, not happy ones either. Anxiety disorders cause a heavy health burden and loss of quality of life too, but are highly under-reported, as many people still do not seek external assistance despite an increase there. Yet, even highly under-reported depression and anxiety are as serious bottlenecks to a satisfied life as are heart and long diseases, although the latter are more mortal. Still, almost 1500 people commit suicide annually, young men in particular. A highly increased material well-being and accompanied freedom of choice are not a blessing to everybody. Stress seems to be the price many pay for a not so relaxed lifestyle, as tranquilizers are the most popular drug and its use is still increasing. Almost 1% of its GDP is spent on drugs, especially for the old, as much as foreign aid.

Security is also an issue, as a quarter of the Dutch population feels quite unsafe at times, partly related to directly experienced criminality with some noticeable fear of strangers too. Worries about society accompany private happiness. There is only limited confidence in politics, despite such a high level of collective services. Surprisingly, the persistent levels of income and wealth inequality rarely seem to excite anybody.

The famous pillars that held Dutch society together have disappeared, as have strong family and religious ties. Together with a rapid influx of foreign immigrants this may have contributed to a rising

alienation, no longer feeling at home in one's own society. Evidence of this is provided by the declining trends in civic society organization memberships and in voluntary work. Less time spent on informal social contacts too suggests that not only the Americans are 'bowling alone' these days. There are at least 2.5 million singles.

Having excelled so long in making money does not automatically qualify a society for promoting a good life. It seems that Dutch society has problems in giving quality of life the attention it deserves. Politics is still much more concerned with annual rituals about purchasing power for specific target groups than with general life satisfaction. Many people would admit that a rich society like theirs should move beyond money, but how to do that few seem to know.

Dutch society could do with more Yin, the receptive feminine social structure to balance the Yang, masculine technical progress. While society is very concerned with emancipation of all kinds of minorities, even animals these days, that does not automatically lead to more well being of the vast majority. The famous law of constant worry has to be broken down at last, and other creative and life fulfilling activities apart from watching TV 10 hours a week may have to be developed for ever increasing leisure time.

### *Dutch Comfort*

Wealth is a relative and vulnerable matter, as the recent financial crisis once again underlined. This may offer only Dutch comfort to a society which history has been completely shaped by the pursuit of wealth. The question whether that has been worthwhile remains unanswerable in a historical context. Those building the dikes a millennium ago started the process of conscious economic development and nation building without ever realising where this would lead to. No one could have predicted that the nuisance of regular floods was turned into an advantage as it created an alertness and degree of organization so suitable for taking advantage of external circumstances. And none of the vested interests that always resisted every change in history ever had higher goals more worthwhile for today's society.

External orientation and creative imitation led to an early commercialization of agriculture, in the absence of much feudal resistance or foreign control, and taking the risk of importing part of its food - from the Baltics - certainly paid off. A growing market orientation also led to new non-agricultural trades and industries, coupled with a remarkable urbanization at least in the West of the country. The swampy sponge became a cluster of viable polders and even a nation during the 16<sup>th</sup> century, after the foreign ruler misunderstood the subtle balance of autonomy and cooperation required to deal with the Dutch.

Political independence ushered in a wave of creativity, liberating private interests and skills that soon would dominate the world market. What probably started with a few courageous fishermen, venturing to sail a little further away than usual, was followed by remarkably enterprising farmers changing the nature of agriculture completely, and ended up with very wealthy merchants controlling world trade and the sea. Amsterdam became the centre of the world economy with its staple market, built around the international grain trade, and its financial institutions like the Stock Exchange.

A 'Golden Age' followed, in spite of the ongoing war with Spain, with a unique synergy between private and public interests, and with cleverly taking advantage of favorable international prices and trade. Unique economic growth resulted from commercial farming, herring fisheries, textiles and international services, and high and rising wages caused a decent spread of accumulated wealth.

The good times came to an end towards the end of the 17<sup>th</sup> century when the international environment became less conducive, not in the least by assertive action from England and France to get their share of the global economic cake. Domestic political structure, internal conflicts and the looseness of the Dutch federation prevented an adequate response to the new situation in due course, even though each and every pioneer risks overtaking by others in the end, certainly a relatively small nation like the Netherlands.

While the Dutch economy stagnated during the 18<sup>th</sup> century, still at a remarkably high level, others started their ascent, England in particular.

That country initiated the famous Industrial Revolution, turning the whole world up side down, at a time when the Dutch Republic and its economy were collapsing as a result of internal strife and French occupation. Dutch industries had declined throughout the 18<sup>th</sup> century, textiles in particular, leading to de-urbanisation and pauperization. As a result of this negative process, and despite an aggressive king and remunerative colonies, the new kingdom of the Netherlands only industrialized again late in the 19<sup>th</sup> century, after a liberal wind swept the world, much behind others which it had dominated before. Dutch craftsmanship, shipbuilding, trade, finance and management could be restored then, on a new industrial base, as well as risk taking and technical ingenuity to compensate for limited natural resources. It was only then that abject poverty could be finally overcome and people's life expectancies drastically improved.

The 20<sup>th</sup> century saw severe ups and downs, wars and depression, with an unprecedented recovery by the Dutch economy from the 1950s onwards. A technological explosion created new and dynamic industries, later overtaken by services, with a high international orientation true to its historical legacy. A so-called polder model was even revived, with clever accommodation of conflicting interests like in the old days when water was the enemy number one and co-operation a necessity. And so the Netherlands remains a wealthy, crowded, cozy cluster of polders, a global hub on a tiny spot with something special to offer to the world that has become a global village: a way to solve problems in a constructive way.

That characteristic cannot be taken away by a temporary crisis in the world economy, even though that causes some hardship also in a rich nation like the Netherlands with a shrinking economy for the first time in decades, apart from some fresh rethinking about a healthy balance between material and immaterial aspects of life.

## Acknowledgements

At the end of my professional life as a development economist, mainly working in East-Africa, I felt the need at last to understand economic developments in my own country. How had it all happened long time ago and how did this small nation get so rich? What led to our famous Golden Age, the 17<sup>th</sup> century, about which I knew something of course, from school and also from the course in economic history that I had taken as a student? No better place to start than with Jonathan Israel, as his 'Dutch Republic' offers a fascinating and inspiring view on our Golden Age. This wetted my appetite to go back even further and find out how it all began long before that. The list of literature shows how far back I went and how much I owe to all the historians mentioned there. So much has been written about Dutch history and so many relevant things said, that it was hard to limit myself to the essentials. Authors like De Vries (J), van der Woude and van Zanden deserve my special gratitude as they have covered the period from 1500 to 1800 in a profound way, making creative use of the limited data that are available from that time. Most of the figures I present for that era are taken from their work, especially from the impressive 'The First Modern Economy'. De Vries' 'Dutch Rural Economy' is still relevant for Africa today, discussing how peasants can become farmers. Some deeper understanding of agricultural changes I owe to Slicher van Bath.

It is obvious, therefore, that I cannot claim much originality in bringing together all the material of others. Yet, the way I did it obviously is my own choice. My own interest in our economic history, from my professional background, made me select information in a special way, with more emphasis on the earlier than the latest centuries.

I sometimes had to interpret conflicting information in my own way as well, as historians did not always agree amongst themselves. How many seagoing vessels did the country have around 1550, what share of the population was fed on Baltic grains, what was the share of colonial trade during the 17<sup>th</sup> and 18<sup>th</sup> century, to what extent did our labour productivity increase from the 15<sup>th</sup> century onwards?

Moreover, historians continue the debate on when exactly our early development started, which factors caused it, how it led to the Golden Age and especially why this wealthy nation stagnated in the 18<sup>th</sup> century and was not the first to have an Industrial Revolution. My interpretation, therefore, often tries to be a reasonable compromise amongst different views.

The fact that I refrained from the use of footnotes or direct references or quotations in the text has something to do with that too. But apart from making my life easier and saving the reader a lot of irrelevant details, this is also related to the fact that many authors copy from each other easily, without always mentioning this, as all have to base their analyses and interpretations on the same limited amount of sources and data.

Nevertheless, I have tried to be as scientific as possible, not losing myself in ideas that are not reflected in the general literature about the subject, nor having any hidden agenda in trying to prove a particular point. Mine was a learning experience.

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