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The value of the judicial infrastructure for
the Dutch economy

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Introduction*

Since its inception in the early 1960s, the academic discipline of law & economics has studied the significance of the judicial infrastructure – in the broad sense of legislation, the judiciary system and law enforcement – for social and economic intercourse. The central notion is that the judicial infrastructure can procure the basic security of persons and property and can provide a considerable amount of certainty that parties will adhere to their contracts, comply with permits, and refrain from activities that harm others.

In the course of the 1990s, the importance of law, the judiciary system and law enforcement also gained a prominent place in the economic literature on development issues. For instance, De Soto (2000) calculates that the poorest people in the world have possessions worth many, many times more than all the foreign aid and investment received over many years. "But they hold these resources in defective forms: houses built on land whose ownership rights are not adequately recorded, unincorporated businesses with undefined liability, industries located where financiers and investors cannot see them." How different it is in the West, where "every parcel of land, every building, every piece of equipment, or store of inventories is represented in a property document that is the visible sign of a vast hidden process that connects all these assets to the rest of the world. Thanks to this representational process, assets can lead an invisible, parallel life alongside their

material existence. They can be used as collateral for credit, ... provide a link to the owner's credit history, an accountable address for the collection of debts and taxes, the basis for the creation of reliable and universal public utilities, and a foundation for the creation of securities (like mortgage-backed bonds) that can be rediscounted and sold in secondary markets."¹

North (1990) has a somewhat different focus and, in addition to property rights, also points out the significance of transaction and transformation costs. In his view "the inability of societies to develop effective, low-cost enforcement of contracts is the most important source of both historical stagnation and contemporary underdevelopment in the Third World".²

In this regard Olson (1993), insofar it was necessary, notes that "individuals need their property and their contract rights protected from violation not only by other individuals in the private sector but also by the entity that has the greatest power in the society, namely, the government itself. An economy will be able to reap all potential gains from investment and from long-term transactions only if it is believed to be strong enough to last and inhibited from violating individual rights to property and rights to contract enforcement."³

However, the literature available on this subject goes far beyond these relatively general indications and outlines. International comparative

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¹ For quotations, see De Soto (2000), pp. 5-6.

² North (1990), p. 54.

³ Olson (1993), reprint p. 127.

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empirical research has been conducted over the last 20 years in an attempt to quantify the importance of institutions for the processes of economic growth and development. As the above quotations have already made clear, the primary focus of this international comparison is ultimately on the possible lessons for third world countries. However, this does not prevent conclusions being drawn with regard to prosperous Western nations, since they are also included in the analyses. In this article, my main aim is to find out what we can learn from the available material about the importance of the judicial infrastructure for the level and the growth of prosperity in the Netherlands.

The article is structured as follows. In Section 2, I will give a more exact description of which institutional elements may be regarded as important for the economic development of a society. Section 3 gives a brief account of how the available figures can be used as a means to identify those factors which have contributed to economic growth in recent decades and the extent to which they have done so. Sections 4, 5 and 6 focus more extensively on the various attempts in the literature to capture the institutional context in measurable indicators and to determine the significance of the institutional context for economic growth. I will finish my argument in Section 7 with a summary and conclusions.

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“Institutions matter”. But which ones?

It is common knowledge that market forces are at the heart of the economic process in our society and lay the foundation for our standard of living. Accordingly, we need not dwell on the social advantages of well-functioning markets for factors of production and products. Division of labour and trade enable those involved to profit from each other's comparative advantages in the production of goods and services. Specialization facilitates production on a larger scale and enables cost advantages to be achieved. In this process, the importance of smoothly operating financial markets must not be underestimated. If businesses had to rely solely on resources from their own cash flow or from their family circle in order to make investments, that would produce a real barrier to capital intensification and technological innovation.

Well-functioning markets do not just spontaneously come into existence. Transactions involving simultaneous exchange in kind can also be completed in difficult circumstances. The most important condition is that those involved can safeguard their property against interference from third parties or the government, either by means of force or with recourse to the law. For transactions which involve asynchronous deliveries and/or financial payment, more is needed. It is conceivable that such transactions can take place beneath the umbrella of private arrangements: mutual trust in a close-knit social network with the threat of exclusion, the added value of a good reputation, constructions with collateral or surety, and arbitration. But there are clearly limits to the scope and effectiveness of such arrangements in cases where transactions only take place infrequently or on an unusually large scale, or cover a long period. In particular,

this might include trade at a distance, borrowing and lending money and insurance contracts. In such cases, it is desirable to have an institutional environment in which compliance with the agreements made can be enforced and in which the future value of money is more or less guaranteed.

Thriving economic development is therefore based on the assumption that an extensive network of institutional guarantees is present. This prompts a need to identify the elements that come into play and to establish their relative importance.

If we can operate on the assumption that the willingness to invest and to produce depends on the trust of those involved that they will in time be able to reap the rewards of their activities, then the heart of the matter lies first and foremost with the *substantive content of property and contract rights*. A number of issues are relevant in this respect: for example, the way in which the rights of shareholders are protected against the management of a business; the influence of small shareholders as opposed to shareholders with a large or majority interest; and the position of banks and other preferential creditors. But it is just as important that the rules of substantive law are also *enforced*. And that depends on the political-administrative context.

A *weak state*, characterized by political instability, by unpredictable changes in policy and by ineffective enforcement of existing laws and regulations, offers manufacturers and investors little in the way of security as they look to the future. At the same time, the presence of corruption in the political and administrative system generates additional

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costs. A strong state, on the other hand, has the power to implement policies without fail once they have been set out, and to thoroughly protect the rights of citizens and companies. In this regard, however, it should be noted that the strength of the state can also constitute its weakness. The rulers may be tempted to infringe upon the private property rights of citizens in order to finance their own political power.

Olson (1993) provides an interesting perspective on this issue, contrasting tyrannical and democratic regimes with one another. He argues that an *autocrat* is interested in generating the highest possible tax revenue in order to pursue his personal goals. To this end, he will probably impose a higher rate of taxation than under a more democratic regime. But this does not mean that an autocrat who expects to be in power for a long time has no vested interest in maintaining the basis for taxation and nurturing its growth; indeed the opposite is true.⁴ He will try to convince his citizens that their possessions and investments are protected, against theft by third parties but also against expropriation by the autocrat himself. In this way he can generate the maximum income for himself at a given rate of taxation.

Problems occur when the autocrat's power base falters or when he approaches the end of his life without a clear expectation of dynastic succession. If he is only focused on short-term survival, this can easily give rise to a situation in which direct confiscation of property generates more than the present value of future tax revenue. He may also be tempted not to meet his long-term obligations (e.g. cancellation of the national debt) and to opt for inflationary financing of his expenditure.

Central to these problems is the inability of the true autocrat to make his own power binding in the long term, whether by an independent judiciary system or by some other means. An autocrat's promise never to infringe upon the private property rights of his citizens is never fully credible.⁵

All things considered, there are therefore two elements necessary to win the trust of individual citizens and companies that accumulated property will be respected and that contracts will be observed. In order to establish laws and to protect private parties against one another, a government is needed which has the monopoly on the legitimate use of physical force and which sets up an impartial system for the administration of justice. But at the same time, there have to be sufficient assurances that the government itself will not overstep the mark with regard to its citizens. This combination of elements points the way towards a *lasting, stable democracy*.

Olson immediately goes on to add that a democracy will not implement policy efficiently in all respects. Given the elected politician's limited time in office, the time horizon in a democracy is not necessarily any longer than that of a typical autocrat. What is more, in order to be elected to government, a politician or political party does not have to meet the wishes of the entire electorate; a majority will suffice. Redistributing the wealth of the more prosperous minority among the less prosperous majority is an obvious danger. The longer a democracy exists, the greater the opportunity for members of society to organize themselves into interest and pressure groups geared towards redistribution. This limits a society's opportunities to innovate and to respond

⁴ After all, the tax revenue is the product of the tax rate (the percentage of the taxable sum that has to be paid in taxes) and the basis for taxation (the amount on which taxation must be paid).

⁵ Kydland and Prescott (1977) introduced the issues of credibility and time inconsistency in the context of macroeconomic policy making. Their work was rewarded with the Nobel prize in 2004.

to changing circumstances, thus hampering economic growth.⁶

However, this is not to say that the conferral and enforcement of individual rights in a stable democracy is characterized by short-sightedness. Feld and Voigt (2003) point out that, in the relationship between state power and the rule of law, it is the *independent judiciary* which ensures that the credibility problem with regard to the protection of individual rights is solved or at least limited. This applies just as much to property and contract rights as it does to freedom of assembly, freedom of speech and free and fair elections. Hanssen (2004) adds in this respect that there is evidence to suggest that the judiciary tends to be more independent in cases where power is divided more equally between political parties and when there are considerable differences between the parties' manifestos.⁷ He explains this by virtue of the fact that there is a greater incentive to accept checks and controls when they also apply to political rivals with completely different views.

⁶ See also Olson (1982).

⁷ His evidence stems from a comparison of the states of the US.

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Explaining economic growth

In the previous section it was pointed out that economic growth is founded on a *combination* of judicial and political-administrative elements. Substantive law is needed to offer basic security to producers and investors, but that in itself is not enough. There also has to be trust that the law will be enforced, both between private parties and in relation to the government. In any case, a dictatorial state and/or political instability do not provide such security and definitely not in the long term. Democratic relations promise a more stable future, especially when they go hand in hand with an independent judiciary. But it should also be acknowledged that, in a lasting democracy, redistributive processes can have the effect of slowing down economic growth. It should further be noted that formal institutions can be supplemented (or, in cases where they do not exist, can be partly substituted) by institutional arrangements of an informal nature. Take, for example, the significance of mutual trust and quid pro quo in a close-knit social network.⁸

This prompts the question of how we can establish empirically whether these institutional elements do indeed produce the expected effect. And if so, what are the relative contributions of the various institutional elements? Much quoted in this context is a remark by North (1990, p. 107): "We cannot see, feel, touch, or even measure institutions; they are constructs of the human mind". Yet North is nevertheless a great advocate of the study of institutions. He argues in

favour of systematically collecting empirical data on the transaction and transformation costs in economic relations. Differences in economic results should be traced back to the institutional origins of these costs.

As interesting as this approach may be, it calls for a large amount of detailed data and is therefore very time-consuming.⁹ Furthermore, the link with economic growth cannot be directly established, either as a causal or quantitative relationship. The macroeconomic literature has opted for a different approach since the exploratory study by Kormendi and Meguire (1985).

In the first instance this involves collecting data on economic development for as large a range of countries as possible, spread across various parts of the world and levels of prosperity. This represents the *variable to be explained*. The focus is usually on the *growth rate* of real per capita national income, taken as an average over a number of years to cancel out business cycle fluctuations.¹⁰ Sometimes analysts also focus on the *level* of real national income per head of population that a country has achieved.

The theories on economic growth are then employed to distil factors which may be assumed to have either a positive or negative effect on the rate of growth and/or on the level of the national income. These are known as the *explanatory variables*.

⁸ In this context, Putnam (2000) speaks of "social capital".

⁹ The work of De Soto (1989) provides a useful example of this approach. In Peru, he took stock of the costs in time and money involved in legally starting up a small business and in acquiring legal ownership of a home.

¹⁰ For an impression, the reader is referred to Barro and Sala-i-Martin (2004, Chapters 1 and 12), who present average per capita growth rates over the period 1960-2000 for 112 countries. The country scores vary from -3.2% to 6.4%, with an overall average of 1.8% per year. Over this period, the Netherlands scores an average growth in per capita national income of 2.0% per year. For more figures, see www.pwt.econ.upenn.edu.

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Frequently used factors include:

- indicators for the amount of physical and human capital in a country. These might include the build-up of the stock of capital goods (investments as a percentage of the national income) and the levels of education and health among the population (participation in primary or secondary education, life expectancy, child mortality, incidence of certain diseases such as malaria).¹¹
- indicators for the influence of government policy. These might include government expenditure of a consumptive nature, which can exert an inhibiting influence through taxation, contrasted with government investment in infrastructure, which can lay a foundation for growth. Another such factor might be the politics of trade: an open economy exposes the business sector to competition and demands cost consciousness and innovation.
- specific geographical and historical circumstances. These might include being located by the sea or in the tropics, or having a population that is fragmented in terms of its ethnic or religious make-up.
- the level of national income at the start of the period being studied. The reasoning behind this consideration is that a 'catch-up' effect can occur. A country that is poorer than might be expected in view of the relevant factors can demonstrate more rapid growth for a period of time, thereby reducing the distance by which it was lagging behind.

Lastly, one or more indicators are added to this list which are supposed to give an impression of the institutional differences between the countries studied.

This is not the place to give an in-depth account of the research techniques used (see Box 1 for a brief description). Neither will I go into the exact meaning of each of the variables mentioned, nor into questions regarding the robustness of the relationships that have been found. For the purposes of this article it is sufficient for the reader to know that, generally speaking, the initial income level, the level of education and the life expectancy of the population, the pattern of government expenditure, the openness of the economy and the country's climate have a significant influence in the direction that is expected from theory.¹²

The one topic I would like to consider within the framework of this article is that of the various indicators used in the literature to capture the institutional differences between countries. When it comes to structuring available research results, this limitation in itself provides sufficient material for discussion.¹³

¹¹ Knack and Keefer (1997) made an attempt to incorporate social capital in the analysis through the introduction of the level of organization of the population and the extent of their trust in their fellow citizens.

¹² Bleaney and Nishiyama (2002) and Barro and Sala-i-Martin (2004) provide a useful introduction to the relevant literature.

¹³ For the sake of clarity, it should be noted that all of the studies dealt with later, in which institutional elements feature, have also taken into account a combination of economic, social, geographical and historical factors. Because the combination differs from case to case, I refer to the various studies themselves for further details.

BOX 1 - A brief note about the research method

In order to carry out empirical research, a regression equation is formulated to link the variable to be explained to the explanatory variables. The result is something like:

$$G = \beta_0 + \beta_1.X_1 + \beta_2.X_2 + \beta_3.X_3 + \dots + \beta_k.X_k + \varepsilon \quad (1)$$

in which:

- G stands for the average rate of growth of per capita national income over a number of years;
- X_1 to X_k stand for the explanatory variables; and
- ε represents the influence of all other factors not included in the equation.

By applying relevant statistical techniques, the coefficients β_0 to β_k in equation (1) can be estimated.

The first coefficient β_0 is a constant in the equation. The other coefficients β_1 to β_k tell us about the direction and size of the influence of each of the explanatory variables X_1 to X_k .

In addition, statistical techniques can be used to discover

- the level of uncertainty surrounding the coefficients β_0 to β_k . On this basis it can be determined whether a certain explanatory variable has a statistically significant influence on G , the economic growth, or whether that influence is not sufficiently clear;
 - whether the explanatory variables X_1 to X_k tell the whole story or only account for part of it;
 - whether the causality in the relationship derives from the explanatory variables in the direction of G , the economic growth, or whether this relationship is the other way round, if only partially.
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Measuring institutional differences

4.1 Civil liberties

Kormendi and Meguire (1985) were the first to attempt to determine the influence of institutions on economic growth. They used data from 47 countries and analysed the average growth rate of national income for the period 1950-1977.

In order to make institutional differences visible, they employed the index for *civil liberties* developed by Gastil under the auspices of *Freedom House*. This index goes from 1 (= completely free) to 7 (= not free at all). According to figures for 1978, all Western countries had a score of 1 or at most 2 (Germany, France, Italy). At the other end of the spectrum, countries such as Burma, South Africa and Uruguay had a score of 6.¹⁴ The results of their analysis suggest that, after controlling for other explanatory variables, the countries with a relatively high level of civil liberties have a growth rate that is between 0.8 and 0.9 percentage points higher than countries with a relatively low degree of civil liberties.

Research has also been carried out into how this influence makes itself felt. A reliable institutional context can lead to more investments and higher investments lead to more growth. But growth can also be encouraged more directly if entrepreneurs do not have to hesitate about tying up available resources in factories and machines for specialized production on a large scale, which are not easy to transfer from one location or type of

activity to another. According to Kormendi and Meguire's estimates, the influence makes itself felt almost entirely through investments.¹⁵

In 2005, the importance of Kormendi and Meguire's research lies mainly in the fact that they showed that the influence of institutions could be substantial. In doing so, it provided the impetus for exploring this theme in greater depth.

In other ways, their research is less successful.

- The index of civil liberties used contains a great many elements, such as freedom of religion, freedom of speech, freedom of assembly and right to a fair trial in matters of criminal law, many of which are not connected (and certainly not directly connected) to the property and contract rights (and the enforcement thereof) which are relevant to economic growth.
- The index gives little or no insight into institutional differences between Western countries.
- The index provides little or no guidance for taking practical measures to stimulate economic growth.
- Kormendi and Meguire used an index that reflects the institutional situation in 1978 to explain the economic growth in the period 1950-1977. This raises questions with regard to cause and effect. While these might be dispensed with by pointing out that the slow pace of fundamental institutional change probably means that the situation in 1978 would not differ all that much from that in 1950, this is clearly not a particularly convincing standpoint.

¹⁴ This index is still drawn up on an annual basis. For the entire series over the period 1972-2003, see www.freedomhouse.org/ratings/allscore04.xls. Nowadays almost all Western countries have a score of 1, except for Greece and most of the new EU member states, which have a score of 2.

¹⁵ The study was repeated by Scully (1998) and Grier and Tullock (1989) for a considerably larger group of 115 and 113 countries respectively. They also found the index to be significant. When, in addition to civil liberties, Scully also examined the indexes designed by Gastil for political liberty (the influence of citizens on those who govern them) and economic liberties (market vs planned economy), the effects are more or less indistinguishable. Taken as a whole, the growth in countries with a large degree of civil, political and economic liberty is between 1.5 and 1.7 percentage points higher than in countries with little freedom.

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4.2 Two main lines of subsequent research

In the extensive literature that followed on from Kormendi and Meguire's study, the measurement of institutional differences developed along two main lines.

One line of research tried to refine the *subjective* evaluation of the political-administrative and judicial infrastructure. In this regard, attempts have been made

- to limit the evaluation to those elements which can really be seen as determining the climate for investment and setting up business;
- to base the evaluation not only on the assessment of outside experts but also to examine the experience of the business community in question, as well as its expectations for the future;
- to deal with the coincidental elements in the subjectivity of the evaluation.

Another line of research focused on elements that can be measured *objectively*. This research is partly motivated by the possibility of producing harder data and partly by the hope that it will result in more specific information that can benefit policy. In this line of research, for example, political instability is measured on the basis of the number of coups and political assassinations. Trust in the fulfilment of contractual obligations is approximated by the circulation of deposit money in the economy. And the protection of property rights and the independence of the judiciary are assessed in relation to specific articles of law.

Although some studies use both types of indicators, for the sake of clarity I will deal with the subjective and objective measurement of institutional differences separately in Sections 5 and 6.

Subjective evaluations

5.1 Risk analyses for foreign investors

There are a number of private organizations which draw up country assessments and produce risk analyses for foreign investors. Experienced correspondents give each country marks for aspects such as political stability, the danger of nationalization and expropriation of property, the government's tendency to meet its obligations, the quality of the bureaucracy ('red tape'), the extent of corruption and the rule of law. The fact that the business community is prepared to pay for these data provides a substantial guarantee of their value. Mauro (1995) and Knack and Keefer (1995) were the first to use this type of data in growth research to compile an index for the security of property rights and the enforceability of contractual obligations.

Mauro based his index on data for the period 1980-1983 provided by Business International,

now known as The Economist Intelligence Unit. He calculated the average of the scores on the items 'efficiency and integrity of the legal system', 'bureaucracy and red tape' and 'corruption', and called the resulting figure '*bureaucratic efficiency*', or *BE* for short. Knack and Keefer used data on 1982 from the International Country Risk Guide (ICRG), which is now called the PRS Group. Their *ICRG index* was based on the items 'expropriation risk', 'rule of law', 'repudiation of contracts by the government', 'corruption in government' and 'quality of bureaucracy'.

Table 1 gives an impression of the scores with regard to the *BE* and *ICRG* indexes.¹⁶ The scale goes from 1 to 10 in all cases, with higher marks for better institutions. The table shows that the Netherlands was performing particularly well in the 1980s, in relation to both the world average and its direct neighbours.

Table 1 - The BE Index for 1980-1983 and the ICRG Index for 1982, on a scale of 1-10*

	world average	NL	AT	BE	CH	DE	DK	FR	UK
BE	6.90	10	8.25	9.08	10	8.67	9.58	8.25	9.00
made up of									
- efficiency and integrity									
legal system	7.33	10	9.5	9.5	10	9	10	8	10
- bureaucracy and									
red tape	6.37	10	7.25	8	10	7.5	9.5	6.75	7.75
- corruption	6.99	10	8	9.75	10	9.5	9.25	10	9.25
ICRG	5.7	9.81	9.45	9.71	9.98	9.59	9.68	9.26	9.34

* The world average is drawn from those countries represented in the relevant data set.

The abbreviations are as follows: NL = the Netherlands, AT = Austria, BE = Belgium, CH = Switzerland, DE = Germany, DK = Denmark, FR = France, UK = United Kingdom.

¹⁶ Unfortunately, Knack and Keefer (1995) have not published their data set in full detail. The values of the ICRG index are borrowed from the appendix to Sachs and Warner (1997).

A comparison between the results of the regression equations by Mauro and by Knack and Keefer shows rather similar results.

Mauro studied the average rate of growth in the period 1960-1985 for 59 countries and found that 1 point higher on the BE index corresponded to 0.6 percentage points of additional growth. Knack and Keefer studied the average rate of growth in the period 1974-1989 for 97 countries and found that 1 point higher on the ICRG index corresponded to 0.5 percentage points of additional growth. It is worth noting that the issue of cause and effect is solved by Knack and Keefer, at least in part, since they took those values of the ICRG index which are as close as possible to the start of the period studied.¹⁷

However, interesting differences can also be observed:

- In Mauro's study, the institutional effect largely makes itself felt through investments. According to Knack and Keefer's results, part of the effect also manifests itself directly through a more effective allocation of the factors of production.
- According to Mauro's findings, the effect has quite a lot to do with the scale of corruption, which forms part of the BE index.
- When Mauro includes an indicator for political instability in the regression equation (regardless of whether it is based on data from Business International or on an objective indicator for political violence), political insecurity appears to play a somewhat larger role and the BE index loses its statistical significance. In Knack and Keefer's research, on the other hand, political violence and the Freedom

House indices for civil and political liberties show no significant effect in conjunction with the ICRG index.

Follow-up research

Since the ICRG data offered wider coverage in terms of countries than the alternatives, these have been the most widely used in later studies.

- For the period 1965-1990, Sachs and Warner (1997) and Bleaney and Nishiyama (2002) found that a 1 point increase on the ICRG index meant 0.3 percentage points of additional growth.
- When Bleaney and Nishiyama (2002) added 'rule of law', a component of the ICRG index, to their analysis alongside the ICRG index itself, this did not add to the explanatory power of the regression equation.¹⁸
- Barro (1999) and Barro en Sala-i-Martin (2004), on the other hand, only looked at the influence of the 'rule of law'. The effect turned out to be significant. Their findings with regard to three 10 year periods, 1965-1975, 1975-1985 and 1985-1995, show that a score that is 1 point higher on 'rule of law' corresponds with 0.3 or 0.2 percentage points of extra growth.

In that context it is worth mentioning that the ICRG indicator for 'rule of law' measures 'whether there are established peaceful mechanisms for adjudicating disputes'. The results mentioned therefore not only support previous findings with regard to the general importance of the judicial infrastructure but also provide an indication of the specific significance of the judiciary.

¹⁷ This applies to an even greater extent to the second index used by Knack and Keefer, based on data on 1972 from Business Environmental Risk Intelligence (BERI). This index is only available for a limited number of countries. But the fact that the results are strongly comparable with the ICRG results reinforces the confidence in the analysis and offers reassurance regarding the issue of cause and effect.

¹⁸ It should be noted that Bleaney and Nishiyama make a reservation with respect to the meaning of this finding, given the high correlation of 0.93 between the 'rule of law' and the ICRG index.

The follow-up research also took a further look at the possible interference with the political context:

- Barro (1999) approximated the level of democracy through the 'electoral rights' index of Freedom House. The effect proved to be statistically weak and possibly non-linear.
- The latter was confirmed by Bleaney and Nishiyama (2002). The democracy indicator, on a rising scale of 0 to 1, was shown to produce its maximum effect at a value of 0.64. Above that value, more democracy has the tendency to slow the rate of growth. However, this does not contradict the idea that a stable democracy is better than a tyrannical society. On balance, the study found that the industrialized nations, all of which score 1 on the democracy indicator, grow 0.7 percentage points quicker than if they had scored a democracy indicator value of 0.
- Barro and Sala-i-Martin (2004) confirmed the non-linear relation between the level of democracy and economic growth; according to their findings, the effect of the democracy indicator reaches its maximum at a value of 0.53. They also reported that the Freedom House index for 'civil liberties' is not significant.

Implications for the Netherlands

By way of reference, Table 2 gives more detailed information on elements of the ICRG index, averaged over the years 1982-1995 and borrowed from La Porta et al. (1998). The data suggest that there is only little scope for stimulating economic growth by strengthening the judicial infrastructure. Apart from the government's tendency to meet its contractual obligations, the Netherlands almost scores an ideal 10.

Compared to the average values for the world as a whole, the Netherlands scores between 2 and 3 points higher. Averaging out the effects found in the above-mentioned studies results in additional growth of over 0.3% per year for each ICRG point. If we limit ourselves to the 'rule of law', the Netherlands scores over 3 points higher than the world average while the research results available indicate extra growth averaging 0.25% per index point. Given all of this, it seems reasonable to conclude that the well-functioning judicial infrastructure in the Netherlands compared to the world average contributes around 0.8% to the country's yearly economic rate of growth.

Table 2 Elements of the ICRG index, average 1982-1995, on a scale of 1-10

	world average	NL	AT	BE	CH	DE	DK	FR	UK
- expropriation risk	8.05	9.98	9.69	9.63	9.98	9.90	9.67	9.65	9.71
- rule of law	6.85	10	10	10	10	9.23	10	8.98	8.57
- repudiation contracts									
by government	7.58	9.35	9.60	9.48	9.98	9.77	9.31	9.19	9.63
- corruption	6.90	10	8.57	8.82	10	8.93	10	9.05	9.10

5.2 The World Wide Private Sector Survey by the Worldbank

There are a number of disadvantages attached to using data from the ICRG and similar organizations. The subjective assessment of a country's institutions may be partly inspired by the country's economic achievements, thereby resulting in a certain bias. What is more, the figures primarily express the investment conditions for foreign companies. This means that too little attention is paid to the significance of the political and judicial context for small, domestic entrepreneurs.

With a view to tackling this last objection, the Worldbank organized a worldwide survey of its own in preparation for the 1997 World Development Report. Its aim was to directly measure institutional insecurity, as it is experienced by the private business sector. As part of this process, many local companies without any foreign stakeholders were contacted.¹⁹

On the basis of the survey data, Brunetti et al. (1997b) compiled an index for the '*credibility of rules*', in which they included items relating to 'predictability of rule making', 'subjective perception of political instability', 'protection of property and personal safety', 'reliability of the judiciary' and 'corruption'. They then related this index to the average growth rate in the period 1984-1993 for 41 countries. They found a significant positive effect which turns out to be reasonably robust when other political variables are added. The effect amounts to 1.4 percentage points of extra growth for each index point. Breaking the results down, 'protection of property' turns out to have a particularly highly significant influence on economic growth.

5.3 Classifying countries according to economic freedom

Another source of data is to be found in the think tanks around the world which rank countries according to their competitiveness and their economic freedom. The World Economic Forum, for example, has spent 25 years assessing the competitive power of countries around the world. Table 3 shows the most recent scores, taken from Porter et al. (2004). In addition to the summary index with regard to competitiveness, a number of assessments relating to judicial infrastructure are also given.

Partly on the basis of material from the World Economic Forum, The Economist Intelligence Unit and the PRS Group, the Fraser Institute and the Heritage Foundation/Wall Street Journal have each developed an index for *economic freedom*.²⁰ Table 4 shows the most recent scores from the Fraser Institute's index, which is now made up of 21 elements grouped into 5 main areas, each with a freedom scale increasing from 0 to 10.

A question well worth asking in this context is exactly what the term '*economic freedom*' means. Of course, private property rights are an indisputable part of this concept. Property obtained fairly and without recourse to force, theft or fraud, must be protected against infringements by third parties. In addition, individuals should be free to use or to sell their property as long as these actions do not interfere with the equal rights of others. But what view should be taken of democratically agreed decisions regarding government activities and the taxation required to finance them (one need only think of the police and the courts), of the regulation of monopolies

¹⁹ See Brunetti et al. (1997a) and for the data go to www.worldbank.org/wbi/governance/wdr97data.html.

²⁰ Cf. Gwartney and Lawson (2004) and Miles et al. (2005). The data can be found on www.freetheworld.com/download.html (Fraser Institute, 1970-2002), and www.heritage.org/research/features/index/downloads.html (Heritage Foundation, 1995-2005).

Table 3 World Economic Forum 2004, growth competitiveness and a number of items from the subindex for public institutions, on a scale of 1-7

	world average	NL	AT	BE	CH	DE	DK	FR	UK
Growth competitiveness	4.20	5.30	5.20	4.95	5.49	5.28	5.66	4.92	5.30
Items subindex public institutions									
- judicial independence	4.0	6.3	5.7	5.5	6.1	6.4	6.6	4.9	6.1
- efficiency legal system	3.9	6.0	6.0	4.7	6.1	6.2	6.5	5.1	6.3
- protection property rights	4.6	6.4	6.4	5.9	6.5	6.4	6.5	5.9	6.6
- ditto intellectual property rights	3.9	6.0	5.7	5.5	6.0	6.2	6.3	5.7	6.1
- business costs crime and violence	4.4	4.6	5.8	4.9	6.3	6.5	6.5	5.0	5.4

or environmental pollution, or of monetary policies that result in inflation? These collective decisions definitely impose restrictions on individual opportunities for making decisions and spending resources. However, when these decisions are legitimized democratically, it can also be argued that they serve the public interest of a country's citizens. Such matters as taxation, regulation or inflation need not therefore be regarded as limiting freedom. If these elements are nonetheless included in an index for economic freedom (and given a negative value), then such an index can be said to exhibit a strong normative or indeed ideological tendency.²¹

This, however, need not form an obstacle to the empirical-positivist use of such indexes and to finding out which elements are positively or negatively correlated with the rate of growth. Through the years, various elements from indices for economic freedom have been employed in growth studies.

Torstensson (1994) made use of data from Scully and Slottje (1991) in a study of the average rate of growth in the period 1976-1985 for 68 countries. The indicator for 'state-owned property' is not found to be significant, but the indicator for 'arbitrary seizure of property' is. The latter is measured on a scale from 1 (= favourable) to 4 (= unfavourable), on which all Western countries score 1, as opposed to a country such as Chad which scores 4. The coefficient found implies that a change on the index from 4 to 1 would result in extra growth of 2.5%.

De Haan and Sturm (2000) used the Fraser index. In their regression analysis of the average rate of growth in the period 1975-1990 for 80 countries, the level of the Fraser index in 1975 turns out not to be significant. However, changes to the index during the period 1975-1990 are important. But attaching value to these findings is difficult, since the main category 'legal structure and security of property rights' has only been included in the Fraser index since 1995.

²¹ For this line of argument, see also De Haan and Sturm (2000).

Table 4 Fraser Institute 2004, economic freedom of the world 2002: total score, specific scores in the 5 main areas and a few items from the subindex for legal structure, on a scale of 0-10

	world average	NL	AT	BE	CH	DE	DK	FR	UK
Economic freedom, total score	6.4	7.7	7.5	7.4	8.2	7.3	7.6	6.8	8.2
Scores for the main areas									
- size of government	5.9	4.6	4.8	4.6	6.9	4.2	3.9	2.8	6.8
- legal structure/security property	5.5	9.1	8.6	7.7	8.6	8.7	9.3	7.4	9.0
- access to sound money	8.0	9.5	9.7	9.7	9.7	9.6	9.7	9.6	9.5
- freedom to trade internationally	6.8	8.6	8.4	8.8	8.3	8.6	8.1	8.1	8.3
- regulation credit/labor/business	5.9	6.7	6.2	6.1	7.3	5.6	6.8	6.2	7.4
Items on the legal stucture subindex									
- judicial independence	5.0	8.8	7.5	6.7	8.2	8.5	9.0	5.7	8.3
- impartial courts	4.9	8.3	8.0	6.2	8.3	8.3	8.7	6.5	8.3
- protection intellectual property	4.8	8.2	7.3	7.2	8.2	8.5	8.7	8.0	8.5
- military interference law/politics	6.7	10.0	10.0	10.0	10.0	10.0	10.0	8.3	10.0
- integrity legal system/law&order	6.2	10.0	10.0	8.3	8.3	8.3	10.0	8.3	10.0

5.4 The Worldbank's governance data

As the previous sections have shown, there are quite a few organizations which, for a variety of reasons, are engaged in assessing the political-administrative and judicial infrastructure of the countries around the world. Under the auspices of the Worldbank, Kaufman, Kraay and Zoido-Lobatón (1999) set out to combine and aggregate all available subjective valuations to arrive at more inclusive indicators of 'governance' or, in other words, good administration and management. The idea behind this approach was that, by combining the information from various sources, the aggregate indicator could cover more countries than each of the sources separately. Furthermore, by comparing and weighing

the separate data, the aggregate could yield a more precise average measure, while at the same time giving an indication of the margin of error associated with that measure. See also Kaufman and Kraay (2002) and Kaufman et al. (2003).

The Worldbank distinguishes six clusters within the concept of 'governance': 'voice and accountability' and 'political stability', 'government effectiveness' and 'regulatory quality', and 'rule of law' and 'corruption'. The indicator for 'rule of law' reflects the extent to which members of society have confidence in and comply with the rules that govern society. This covers the effectiveness and predictability of the judiciary, the enforceability of contracts and the prevention of crime.²²

²²This means that the ground covered by the Worldbank's 'rule of law' indicator is considerably broader than the indicator on the ICRG index with the same name.

Table 5 Worldbank, dimensions of 'governance' 2002, on a scale of approx. -2.5 to +2.5

	world average	NL	AT	BE	CH	DE	DK	FR	UK
Voice and accountability	0	1.63	1.32	1.44	1.63	1.51	1.72	1.29	1.47
Political stability	0	1.37	1.29	0.97	1.61	1.06	1.26	0.73	0.81
Government effectiveness	0	2.14	1.79	1.85	2.26	1.76	1.99	1.67	2.03
Regulatory quality	0	1.87	1.67	1.40	1.62	1.59	1.74	1.25	1.75
Rule of law	0	1.83	1.91	1.45	2.03	1.73	1.97	1.33	1.81
Control of corruption	0	2.15	1.85	1.57	2.17	1.82	2.26	1.45	1.97

Table 5 presents the most recent data, taken from Kaufman et al. (2003) and based on no less than 250 items drawn from 25 sources compiled by 18 organizations (international organizations, risk-analysis companies, think tanks and NGOs).²³ In each case the underlying data are combined in such a way that the 'governance' indicator has a normal distribution with a mean of 0 and a standard deviation of 1. The vast majority of the observations fall between -2.5 and +2.5, with a higher score representing better administration and management.

Kaufman and Kraay (2002) use the 'rule of law' data for 2000 in an analysis of the standard of living²⁴ in 1996 for 153 countries. They found a significant coefficient of 1.37, which implies that one point higher on the index value causes per capita income to rise by 3.9 in the long term. There are no indications that this effect works the other way round, i.e. that more prosperity leads to better institutions.

²³ The 'governance' data for 1996, 1998, 2000 and 2002 can be found on: www.worldbank.org/wbi/governance/govdata2002.

²⁴ More precisely, the natural logarithm of per capita national income.

O

Objective criteria

6.1 Political violence

Barro (1991) was the first to attempt to capture the meaning of the institutional context using 'hard', objective criteria. In order to measure political instability, he took the average yearly number of *political assassinations* and the number of *coups and revolutions* as his basis. For most countries, the figures available on these subjects span a rather long period.

His analysis of the average rate of growth in 98 countries for the period 1960-1985 shows a significant negative correlation between each of the two criteria and economic growth. It is also important to note that incorporating these criteria causes the Freedom House indices for civil and political liberties to lose their significance.

These findings should immediately be qualified by adding that political violence is only a very rough criterion for political instability. After all, leaders and governments can also be ousted by constitutional means. What is more, political instability is neither a sufficient nor an essential condition for changes to property rights.

In that light it should come as no surprise that, in follow-up studies which included more adequate indicators for the protection of property and contract rights, the criteria for political violence introduced by Barro no longer turned out to be significant. See Knack and Keefer (1995), Brunetti et al. (1997b), De Haan and Sturm (2000), Bleaney and Nishiyama (2002).

6.2 Contract-intensive money

Clague et al. (1999) took a completely different approach. In their view, the enforcement problems which underlie the use of various forms of money and credit reflect the enforcement problems which occur with regard to trade in goods and services in general. The extent to which society is prepared to retain money in the form of bank balances instead of tangible coins and banknotes therefore forms a good indicator of the security of property and contract rights; in this context, 'good' means objective and easy to measure. They defined the index for '*contract-intensive money*' as CIM = $(M2 - C)/M2$, in which: M2 = society's total money supply and C = the amount of currency (i.e. coins and banknotes) in circulation.

Relating this CIM index to the average rate of growth in 95 countries over the period 1969-1990, Clague et al. found a significant positive correlation, which manifests itself to a considerable extent through investments. To be more precise: an increase of 0.1 on the CIM index corresponds to 0.8 percentage points of extra growth.²⁵

The approach taken by Clague et al. deserves a mixed reception. Their study is worthwhile, insofar as the CIM index demonstrates a substantial correlation (around 0.6) with other indicators, such as those from Freedom House and ICRG, and insofar as the regression results provide additional support for the importance of the institutional context. Yet the CIM index also presents us with problems, since it only

²⁵ According to Clague et al. their CIM index over the period 1969-1990 had a world average of 0.78 and a standard deviation of 0.13. However, their study does not provide data for separate countries, which makes it impossible to determine the implications for the Netherlands.

covers a small part of the variation in the institutional environment and, what is more, it does not supply any concrete points for action when it comes to policy changes.

6.3 Legal rules and legal systems

For a number of years, researchers have been looking for indicators of the security of property and contract rights which are derived directly from prevailing laws and regulations.²⁶

Law & finance

La Porta et al. (1998) have tried to determine the level of protection available to providers of credit by charting in detail the relevant rules in company and bankruptcy law. In doing so they limited themselves to 49 countries which have at least five companies with publicly traded shares, without government participation. Their research features two indicators: '*anti-director rights*' and '*creditor rights*'. The former expresses the extent to which the interests of smaller shareholders are protected against the management of the company and against the majority shareholders. The latter examines the protection of preferential creditors. Worldwide, substantial differences can be seen in the legal rules in these areas. See Table 6.

La Porta et al. linked these differences to the

various legal traditions in the world. Countries which belong to the '*common law*' tradition offer considerably better protection than '*civil law*' countries, particularly when the legislation and regulations have their origin in French civil law. German civil law and the Scandinavian countries occupy the middle ground in this regard. These differences are partly compensated by additional legal requirements, such as a mandatory dividend or a minimum reserve, but not by extra enforcement efforts, at least not in the case of the French legal tradition.

The economic significance of the differences becomes evident in La Porta et al. (1997), where it is shown that the legal environment is related to the size of the capital market and the level of external financing of businesses.

Common law versus civil law

Since the study by La Porta et al. (1997) suggested that the difference between '*common law*' and '*civil law*' could be economically relevant, this theme has been explored in greater depth in the literature in a number of different directions.

Working on the assumption that there is an influence on the way in which the capital market operates, Beck et al. (2002) were interested in how this influence might come

Table 6 The indices of La Porta et al. (1998) for 'anti-director rights' and 'creditor rights', on a scale of 0-7 and 0-4 respectively

	world average	NL	AT	BE	CH	DE	DK	FR	UK
Anti-director rights	3.00	2	2	0	2	1	2	3	5
Creditor rights	2.30	2	3	2	1	3	3	0	4

²⁶ For instance, Djankov et al. (2003) examined the efficiency of judicial authorities in dealing with two specific types of cases, namely: tenant evictions and recovering the value of a cheque in the event of payment problems. For this purpose they gathered data in 109 countries by approaching legal firms affiliated with Lex Mundi with questionnaires on the nature and duration of these two procedures. Due to the fact that the findings of this study have not been incorporated into growth research (at least not yet), I will not deal with them in greater depth in this article. Suffice to say that the Netherlands scores very well on the average duration of both procedures. It should be added that this line of measurement is extended to yet more fields of regulation in World Bank (2005).

about. They distinguished between two channels:

- On the ‘political’ level, the ‘common law’ and ‘civil law’ traditions differ in the priority accorded to the rights of the state. ‘Common law’ is traditionally based on the protection of private property against the crown and the state. The French and German traditions, on the other hand, award an important role to the state when it comes to promoting the public interest. Their laws give the state greater scope in this regard.
- The traditions also differ in their adaptability in the face of changing circumstances. The development of the law on the basis of case law within the ‘common law’ tradition is more flexible than the legislative process of ‘civil law’.

The estimation results of Beck et al. seem to indicate that the significance of ‘common law’ is more likely to be due to its flexibility than to its providing the state with less room for manoeuvre.

Levine (1998) and Mahoney (2001) went one step further in the sense that they not only examined the financial markets but also the consequences for the real economy.

Mahoney (2001) analysed the average growth rate in 102 countries for the period 1960-1992 and found a significant difference according to legal tradition. His conclusions state that ‘common law’ countries grow 0.7 percentage

points per year faster than ‘civil law’ countries, after controlling for other factors. That effect could make itself felt through the financial markets but it may also operate on a broader scale. The indicator for the legal tradition correlates to a certain extent with Business International’s subindex for ‘judicial quality’, the Heritage Foundation’s subindex for ‘property rights’ and the CIM index of Clague et al., each of which demonstrate a significant positive relation to rate of growth. Unfortunately, it is not exactly clear what value can be attached to Mahoney’s findings, as his study does not include detailed estimation results.

That problem does not arise with Levine (1998). He took an approach comparable with that of La Porta et al. by coming up with his own indicator for ‘*creditor rights*’ on a scale of -2 to 1. See Table 7. To this he added an index reflecting the enforcement efforts with respect to property rights. The latter index, ‘enforce’, is the average of the ICRG items ‘rule of law’ and ‘repudiation of contracts by the government’ for the period 1982-1995.²⁷ He then applied these two indicators in a study of the average rate of growth in 42 countries for the period 1976-1993.

Levine observed a significant positive correlation between the value of loans by commercial banks and ‘*creditor rights*’ and an even stronger correlation with ‘enforce’.

Table 7 Levine’s (1998) index for ‘*creditor rights*’, on a scale of -2 to 1

	world average	NL	AT	BE	CH	DE	DK	FR	UK
Creditor rights	-0.31	-1	0	0	-1	0	0	-2	1

²⁷ See Table 2.

He concluded that the influence of the legal tradition makes itself felt in that countries which belong to the German legal tradition have a more highly developed banking sector than other countries. Overall, his findings show 'creditor rights' and 'enforce' to be more important than the legal tradition.

In turn, economic growth is positively related to the development of the banking sector. A one point increase in 'creditor rights' and 'enforce' leads to extra growth of 0.4% and 0.7% respectively, through the development of the banking sector. Applying this to the Netherlands, it can be calculated that an 'ideal' institutional context, with an increase in 'creditor rights' and 'enforce' to the maximum values of 1 and 10, would mean extra growth of $0.8 + 0.2 = 1.0\%$.

In order to obtain a more thorough understanding of the economic significance of the difference between the 'common law' and 'civil law' traditions, it is also useful to consider a number of growth studies which focus on former European colonies (and which therefore do not deal with Western Europe as such).

Acemoglu et al. (2001) wondered whether the differences in development between the former colonies could simply be traced back to the identity of the colonizer, which imposed its own institutions on its new outpost. Other factors related to the specific circumstances in the colonized region might also have exerted an influence. First of all, their study shows substantial variation in the average score on the ICRG subindex for 'expropriation risk' in 64 former colonies for the period 1985-1995. There turns out to be a correlation between these differences and the standard of living attained in 1995.²⁸ Subsequent examination

of the origins of the institutional context shows a stronger relationship with the colonists' chances of survival in former centuries than with the nature of the legal tradition. In other words, local circumstances determined whether proper European settlements were established. If so, institutions were set up in the region to take care of law enforcement and these subsequently turned out to form a receptive ground for investment. If not, then an extractive state was established with the aim of transporting natural resources to the colonial power as quickly as possible. And this colonial legacy still leaves its mark, due to the slow pace at which institutional reforms are implemented and at which the problem of economic deprivation is addressed.²⁹

Beck et al. (2003) tested the reasoning of Acemoglu et al. using capital market figures. They found that when there is an exclusive focus on the legal tradition of the colonizer, a relationship can be found with the protection of private property rights and with the development of the capital market. However, if geographical characteristics of the former colonies are also taken into consideration, then these features account for a larger part of the mutual differences than the legal tradition to which the colonizing power belonged.

All things considered, there would appear to be a certain relationship between the legal tradition to which a country belongs and the organization of the capital market and the financing of businesses. But in explaining the differences between countries in terms of growth rate, the actual protection afforded to private property rights seems to exert a greater influence than the distinction in terms of legal tradition.

²⁸ To be precise, the natural logarithm of per capita national income.

²⁹ The analysis in Acemoglu et al. (2002) follows a similar line of reasoning, except there the focus is on the significance of population density and the level of prosperity at the time of colonization. The findings suggest that the Europeans mainly settled in the relatively poor and sparsely populated areas while they plundered the more prosperous regions.

6.4 The independence of the judiciary

As observed in Section 2, an independent judiciary can help to reinforce the credibility of the government that it will not violate private property, even in the long term. Feld and Voigt (2003) set about measuring this effect and created two objective indicators for the independence of the highest court of justice. On the basis of 12 elements from the prevailing laws and regulations, they created an indicator for *de jure independence*. These elements include such issues as who is appointed and for how long; whether judges can be dismissed; who is entitled to bring forward a case; whether matters can be assessed in relation to the constitution; and whether rulings are published. They also explored the situation with regard to *de facto independence* using 8 characteristics of the actual relationships and developments since 1960. These characteristics included the average term in office; changes in the size of the court, actual income and budget; and changes to legislation. Data were collected for around 70 countries and converted into two indices with a rising scale of 0 to 1 for level of independence. See Table 8.

Feld and Voigt found that their indices only exhibited a limited correlation with other indicators for the 'rule of law'. When they

inserted their indices in a regression on the average rate of growth in the period 1980-1998 for 66 and 57 countries respectively, the *de jure* index did not turn out to be significant but the *de facto* index did. It would appear that what happens in practice is more important than what is written in the books. The findings are robust for the addition of indicators with regard to legal tradition, political stability and economic freedom; the first two are not significant, while the third is.

It is tempting to consider the implications for the Netherlands. After all, in light of the score of 0.47 on the *de facto* index, there would appear to be a substantial scope for improving the factual independence of the judiciary. This improvement could result in a considerable stimulus for growth, given the estimated effect of 0.5 percentage points of extra growth for every 0.1 of a point on the index. Unfortunately, unlike the scores for most of the other countries, the *de facto* index score for the Netherlands is only based on 3 of the 8 characteristics identified by Feld and Voigt. It therefore seems reasonable to suppose that this results in a considerable bias in the score for the Netherlands,³⁰ so that little value can be attached to this notional potential for growth.

Table 8 De jure and de facto independence of the judiciary according to Feld and Voigt (2003), on a scale of 0-1

	world average	NL	AT	BE	CH	DE	DK	FR	UK
De jure independence	0.65	0.63	0.73	0.83	0.46	0.73	0.78	0.63	-
De facto independence	0.59	0.47	0.90	0.80	0.94	0.80	0.81	0.78	-

³⁰ See for example the high scores in Tables 3 and 4 for 'judicial independence'.

0

Conclusions

Having completed this overview of the large number of studies on the relationship between the institutional context and economic growth, the time has come to reach conclusions.

1. Given the diversity of groups of countries, economic control variables and institutional indicators that have been examined, the literature makes at least one thing clear: all the studies show that the institutional context has a significant and substantial influence on the rate of economic growth.
2. It is a good deal more difficult to determine which elements of the institutional context are more or less important. There is a considerable amount of correlation between the various indicators, which makes it no simple task to separate out or distinguish between the influences at play. In addition, interpreting the results in the literature is made more difficult by the fact that far from all the data have been published or can be traced back to their source.³¹ However, this need not preclude an attempt to trace at least some lines of influence.
3. First of all, Kormendi and Meguire (1985) made a connection between the level of *civil liberties* in a society and the rate of economic growth. When more specific indicators for political-administrative and judicial infrastructure were introduced in the follow-up research, these turned out to be far more relevant, which meant that the link with civil liberties disappeared from view once again (e.g. Knack and Keefer, 1995; Barro and Sala-i-Martin, 2004).
4. A similar process took place with regard to *political instability*. Once Barro (1991) and Mauro (1995) discovered a negative link with economic growth, this concept did not return as a feature of any importance in later studies (e.g. Knack and Keefer, 1995; Brunetti et al., 1997b; Bleaney and Nishiyama, 2002; Feld and Voigt, 2003).
5. The *political system* does seem to be of importance, in the sense that a non-linear connection was found between the level of democracy and the rate of growth (cf. Bleaney and Nishiyama, 2002; Barro and Sala-i-Martin, 2004). Replacing a dictatorial state with a more or less democratic system removes the uncertainty that the autocrat, if put under pressure, may well violate his subjects' property rights and renege on his obligations. In this sense a democracy would, without question, appear to offer a more fertile soil for investment and growth than a dictatorial regime. But the redistribution mechanisms which almost irrevocably occur in a lasting and stable democracy, in turn, cause some slow-down of innovation and growth.
6. Almost all the studies point to the importance of a good *judicial infrastructure*. This sometimes occurs through general or indirect indicators such as the ICRG or CIM indices (Knack and Keefer, 1995; Sachs and Warner, 1997; Clague et al., 1999; Bleaney and Nishiyama, 2002). But when more specific and direct indicators are included for the *protection of private property rights* and the *functioning of the judiciary*,

³¹ It is just as difficult to determine the channel through which any influence makes itself felt. For example, the effect would seem to come about partly through more investments and partly through a better allocation of the available factors of production.

these serve just as well, if not better. In that context, I can refer to the significant influence of such indicators as:

- the 'rule of law' (Barro, 1999; Barro and Sala-i-Martin, 2004);
- 'protection of property' and 'property rights' (Brunetti et al., 1997b; Mahoney, 2001);
- 'arbitrary seizure of property' and 'expropriation risk' (Torstensson, 1994; Acemoglu et al., 2001);
- 'creditor rights' and 'enforce' (Levine, 1998); and
- 'de facto judicial independence' (Feld and Voigt, 2003).

7. The actual protection of private property rights and the functioning of the judiciary also seem to provide a better explanation for international differences in growth rates than the distinction between the *legal tradition* to which the countries belong (Levine, 1998; Acemoglu et al., 2001; Beck et al., 2003; Feld and Voigt, 2003).
8. With some good will, the importance of the judicial infrastructure for economic growth can be *quantified*. When the functioning of the judicial infrastructure is measured using a (rising) index on a scale of 1 to 10, the effect lies between 0.2 and 0.8 percentage points of extra growth for every index point.³²
9. Due to the high level of abstraction of the analysis, in combination with the problems in separating and distinguishing between the various influences, the significance for *policy* is rather limited. The findings do

not offer much guidance for government officials who are interested in taking practical measures. In light of the results discussed under point 6, it is reasonable to assume that anyone looking to strengthen the judicial infrastructure with a view to stimulating economic growth would be best to start with the actual protection of private property rights against interference by third parties and the state, and with the functioning of the judiciary. But as yet, further differentiation is not possible.

10. Following on from this point, it should be noted that there are also definite *lacunae* in the literature discussed in this article. For example, too little attention has been paid to the significance of that part of the rules and regulations which is aimed at combating market failure (such as anti-trust law, environmental protection, or safeguarding working conditions). Nor has the role of harmonization of legislation and regulations within the context of the EU been mentioned explicitly. However, it is doubtful whether such aspects could have been dealt with in a meaningful way in this type of research, which is characterized by a high level of abstraction, a limited number of observations and a fairly rough indicator of prosperity in the form of per capita national income and its average rate of growth.
11. Turning our attention to *the Netherlands*, an obvious first conclusion is that the scope for improving the judicial infrastructure would appear to be relatively modest. After all, for many of the indicators dealt with in the course of this article, the Netherlands'

³² The minimum value of 0.2% is supplied by Barro and Sala-i-Martin (2004), while the maximum value of 0.8% is provided by Torstensson (1994), Brunetti et al. (1997b) and Levine (1998).

scores can be described as (very) good from an international perspective.³³ According to a number of studies³⁴ the increase in prosperity that might be achieved by further strengthening the judicial infrastructure is therefore small or even very small. However, a number of reservations can be expressed regarding this conclusion. Firstly, it would clearly be ill-advised to read this conclusion in such a way that no effort need be made to maintain the existing system and to modify it where necessary in line with changing circumstances (e.g. to accommodate developments such as ICT and e-commerce). Secondly, there is some evidence to suggest that scope for improvement does exist in certain areas. For example, data presented earlier in this article show that the Netherlands is lagging behind its neighbours with regard to at least two items: the business cost of crime (Table 3) and certain elements in the protection of creditors (Tables 6 and 7).³⁵ With this in mind, there would certainly seem to be scope for a boost to the economy resulting from specific improvements in the field of law and law enforcement.³⁶ Thirdly, the impression has been given that the scales for most indicators have an absolute maximum. But closer examination reveals that the range of the scales is based

on what is regarded as practically attainable at the time (in the case of subjective evaluations) or what is conceivable (in the case of objective indicators). It cannot be ruled out that a substantial strengthening of the judicial infrastructure in the Netherlands (perhaps in the form of shorter handling times or greater unity of law) could result in improvements that exceed expectations. In that case, the promise contained in the work of Kaufman and Kraay (2002) may yet be fulfilled: possibly the 'rule of law' can be improved to such an extent that the doubling of the per capita national income in the long term will become a realistic prospect.³⁷

12. Finally, it is also possible to take another approach to the judicial infrastructure in the Netherlands, by comparing it with the world average and calculating the differential effect in terms of economic growth. On the basis of the ICRG data in Table 2, the Netherlands scores over 3 index points higher than the world average for 'rule of law'. Averaging the available research results indicates extra growth of around a quarter of a percentage point per index point. In short, the fact that the judicial infrastructure in the Netherlands performs better than the world average results in extra economic growth of 0.8%.³⁸

³³ Nor are there any indications of an absolute or relative deterioration over time, at least in terms of judicial infrastructure. For example, the Netherlands was 9th on the Fraser Institute's 'economic freedom' index in 1970 with a score of 7.0 and 11th in 2002 with a score of 7.7. On the subindex for 'legal structure' the Netherlands had the same score (9.1) in 2002 as it had in 1995. And according to the Worldbank's 'governance' data, the Netherlands was 9th on the 'rule of law' index in 1996 and 11th in 2002. Moreover, the difference with the country at the top of the list, Switzerland, was small and not significant; see Kaufman and Kraay (2002, p. 187).

³⁴ This is particularly true of the studies based on ICRG data, discussed in Section 5.1.

³⁵ In Table 8, the Netherlands' score for the de facto independence of the judiciary is also mediocre at best, but as already stated, there are doubts as to the significance of this result.

³⁶ Based on Levine (1998), extra growth of 1% per year would appear to be feasible if maximum improvements are achieved in the areas 'creditor' and 'enforce'.

³⁷ In Table 5, the Netherlands scores 1.83 on the index while – given the normal distribution of the indicator – a score of 2.5 is theoretically possible.

³⁸ And this would appear to be a conservative estimate. Based on Levine (1998), the contribution to the economic growth can be estimated at 1.3% per year. And according to Kaufman and Kraay (2002), the per capita income in the Netherlands would be higher than the world average by a factor of 12.

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