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The Netherlands: Failure of a Neo-classical Policy Agenda

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ABSTRACT *The neo-classical plea for flexibilizing European labour markets is strong and convincing within a static general equilibrium framework, but it is counter-productive for dynamic Schumpeterian efficiency. Taking the example of the US and the Netherlands, we argue that more flexible labour relations and reduction of wage-cost pressure did indeed unleash high job growth, but gave negative incentives to labour productivity growth and innovation. Our illustration with macro figures is supported by evidence from micro data. Firms in the Netherlands that realized substantial wage savings due to flexible labour relations do not realize above-average sales growth; and there are indications that they realized lower labour productivity growth. Anglo-Saxon "hire and fire" labour relations can be favourable for "entrepreneurial" innovation regimes, but they may be harmful for "routinized" innovation regimes that are dependent on a continuous historical accumulation of knowledge.*

Introduction: The Labour Market Flexibility Agenda

Other contributions to this issue treat the question of successful innovation and catching up (or falling behind) in economic development, mainly as a problem of adequate innovation policy. This paper approaches the same problem from a different angle. We emphasize that innovation performance in a country is, among others, also dependent on the quality of labour relations and on wage formation. We argue that successful organizational learning and accumulation of knowledge require stable and longer lasting labour relations. Such stable labour relations create trust, loyalty and commitment of personnel, which helps to prevent a firm's technological knowledge being easily leaked to competitors. In other words, trustful labour relations are relevant for the appropriation of innovation benefits and for minimizing positive externalities that lead to market failure. Finally, we argue that modes of wage formation will influence the speed at which labour saving technology is adopted.

Such considerations are at odds with the popular neo-classical argument that making labour markets more flexible should reduce European unemployment. We recognize

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that the neo-classical labour market flexibilization agenda has a strong and convincing logic in a static (Walrasian) general equilibrium framework. And there can be no doubt that flexible Anglo-Saxon labour markets outperform "rigid" Rhineland labour relations in terms of job creation. We maintain, however, that the Rhineland model is better in terms of dynamic Schumpeterian efficiency. We argue that rigid Rhineland labour markets perform better in terms of labour productivity growth; and the Rhineland model may be particularly favourable for innovation in "routinized" innovation regimes (i.e. the Schumpeter Mark II model) that require continuous historical accumulation of knowledge. Finally, we argue that even in rigid Rhineland labour markets, unemployment can be reduced in two ways. First, by investment in education that increases functional (rather than numerical) flexibility of personnel and, second, in the case of structural unemployment, by means of reducing standard labour hours per employee.

The neo-classical call for flexibilization of labour markets typically includes the demand for easier hiring and firing of personnel, more flexible (upward, but more importantly: downward) adaptation of wages in response to relative scarcities in the labour market and a reduction of the power of trade unions that cause labour market rigidities. In a neo-classical perspective, (mass) unemployment can be avoided if the price of labour is allowed to adapt flexibly to changes in demand and supply. Scarcity or abundance of various categories of labour should flexibly translate into wage differentials between these categories. For example, people with low productivity can still be employed if their wages adapt in downward direction. Or if certain groups of qualified people are short in supply, their wages should rise in order to raise the supply of such people. Such flexible adaptation of prices to relative scarcities is expected to bring the labour market "automatically" into equilibrium (at least in the long run).

There are two countries in the world economy that are frequently cited as examples of the relevance of a neo-classical view of the labour market. The first example is the US. In the 1970s, the power of US trade unions was broken, and an increasing number of sectors of the US economy became trade-union-free zones. There is abundant evidence that this translated into (downwardly) flexible wages, notably among workers with low qualifications. In exchange, the US job machine created impressive numbers of jobs, clearly outperforming job creation in the rigid economies of continental Europe.

The other example is the Netherlands. In response to high and rising unemployment (following the "Dutch disease" of the 1970s and a severe recession in the early 1980s), Dutch trade unions decided to substantially reduce their wage claims. Between 1982 and 2002, real wages in the Netherlands grew, on average, by only 0.8% per year as opposed to 1.9% in the European Union (EU). This policy seemed to work according to expectations: Some years after 1982, employment began to rise. For example, in the period 1990–2002, numbers of labour hours grew by 1.7% per year as opposed to an EU average of 0.1% (Jansen, 2004, p. 410). By the end of the 1990s, the Netherlands was the only country in Europe that had full employment according to ILO standards (neglecting hidden unemployment).[1]

The Dutch example is of particular relevance as it is often considered more attractive than the US model. In contrast to the US, trade unions still exist and continue to have some influence. Moreover, the Dutch welfare state (although partly cut back) still exists and income distribution is not yet excessively unfavourable for the poorer part of the nation. The Dutch model of job creation appears socially acceptable to large parts of public opinion. There is a consensus in the country that all that is required to make the

job machine work is for trade unions to make "reasonable" wage claims, in solidarity with the unemployed.

The remainder of this paper is dedicated to a criticism of the Dutch and the US models. There can be no doubt that the neo-classical flexibilization agenda has lead to impressive job creation in both countries, strongly outperforming job growth in the rest of continental Europe. However, we present theoretical arguments that should make it plausible that the flexibilization agenda in both countries also caused a severe slowdown in the speed of technical change—in the Netherlands since the early 1980s, and in the US from the 1970s up to the mid-1990s. We illustrate our argument, using data on labour productivity growth and long-run employment elasticities of economic growth.

What is Wrong with the US and Dutch Job Miracles?

Using different methods, and within quite different institutional settings, both models have essentially achieved the same thing: a reduction of wage-cost pressures. In the US, beating the trade unions and realizing downward wage flexibility brought this about. In the Netherlands, trade unions voluntarily sacrificed wage increases and tolerated a wage-cost-saving flexibilization of labour relations. The latter resulted in an increasing number of people working on "non-typical" arrangements (e.g. temporary contracts, work-on-call, "freelance" or via temporary employment agencies). In the fourth section later we cite empirical evidence that such flexible arrangements lead to substantial wage-cost savings and thus enhanced the policy of voluntary wage restraint. In the following, we argue that this led to a lower overall level of innovation activity and to a decline in labour productivity growth.

One should realize that national income in an economy can grow only in two ways: (1) either by working more hours or (2) by raising the value added per hour worked, making creative use of modern technology. Table 1 illustrates that, in the long run, the second option has lost importance. During the 1950s and 1960s, value added (i.e. gross domestic product, GDP) per working hour was rising very fast but productivity growth rates declined during the 1970s and remained at low levels during the 1980s and 1990s. This pattern holds for most OECD countries and is in itself an interesting observation. There is literature suggesting that this world-wide decline of labour productivity growth

Table 1. Growth of labour productivity 1950–2000 (Average Annual Growth Rates of GDP per working hour, at 1996 prices)

	B	F	D[a]	I	NL	UK	EU-14[b]	US	Japan
1950–1960	3.2	5.2	6.3	3.2	4.2	1.8	*4.2*	3.6	5.9
1960–1973	5.5	5.1	5.0	6.7	4.5	3.6	*5.7*	2.6	8.4
1973–1980	4.3	3.4	3.3	3.3	2.5	2.3	*3.0*	*1.0*	2.7
1981–1990	2.3	2.9	1.6	2.0	*1.0*	2.2	*2.1*	*1.5*	3.0
1991–2000	2.4	1.3	2.4	2.0	*1.1*	2.2	*2.2*	*1.6*	2.0
1991–1995	2.3	1.5	3.2	3.1	*1.1*	2.6	*2.3*	*1.1*	1.8
1996–2000	2.5	1.1	1.6	0.8	*1.1*	1.8	*2.0*	*2.0*	2.3

[a]Rows 1–4: West Germany; row 5: United Germany.
[b]Excluding Luxemburg.
Source: Computed from Groningen Growth and Development Centre data (www.eco.rug.nl/ggdc/).

Table 2. Average annual growth rates of GDP, 1996 prices (in national currencies; average annual growth rates)

	B	F	D[a]	I	NL	UK	EU-14[b]	US	Japan
1950–1960	3.0	4.6	7.7	6.1	4.6	2.7	*4.5*	3.5	8.8
1960–1973	4.9	5.4	4.1	5.3	4.9	3.1	*5.2*	4.3	9.7
1973–1980	2.7	2.5	2.3	3.5	2.4	1.1	*2.6*	2.6	3.4
1981–1990	1.9	2.4	1.4	2.2	2.2	2.7	*2.4*	3.2	4.0
1991–2000	2.1	1.8	1.7	1.6	2.8	2.2	*2.5*	3.3	1.5
1991–1995	1.5	1.1	1.6	1.3	2.1	1.6	*1.6*	2.4	1.4
1996–2000	2.8	2.5	1.7	1.8	3.6	2.8	*3.5*	4.1	1.6

[a]Rows 1–4: West Germany; row 5: United Germany.
[b]Excluding Luxemburg.
Source: Computed from Groningen Growth and Development Centre data (www.eco.rug.nl/ggdc/;).

has something to do with Schumpeter–Kondratieff long waves in economic growth, caused by the thrust-wise introduction of major innovations. This is not the place to discuss the realism of such theories (for a discussion see Kleinknecht, 1990).

We confine ourselves to interpreting differences in labour productivity growth between countries. While EU-average labour productivity growth declined to about 2% per year, US labour productivity growth went down to 1% after 1973; in later periods, US growth rates recovered a bit, but a stronger recovery did not take place until the second half of the 1990s in the wake of a boom in information and communication technology (ICT) industries (Jorgensen & Stiroh, 1999). A very strong decline of labour productivity growth rates is observable in the Netherlands. During the 1980s and 1990s, Dutch growth rates were roughly half of the EU average.

During the 1980s and 1990s, the Netherlands had overall GDP growth rates that were close to the EU average (see Table 2). US growth rates were somewhat higher than the EU average. Given that, in both countries, GDP per working hour grew substantially slower than the EU average, this implied that labour hours had to grow much faster than in the EU. The latter is reflected in Table 3. During the 1980s and 1990s, a 1% increase in GDP coincided with 0.12% (or 0.13%) growth of labour hours in the EU; but the same 1% GDP growth in the US and in the Netherlands led to 0.51–0.61% growth of labour hours.

Table 3. Employment elasticities of major OECD countries: The percentage increase of labour hours if GDP grows by 1% (1996 prices; figures are based on employment measured in annual hours worked

	B	France	D[a]	Italy	NL	UK	EU-14	US	Japan
1950–1960	−0.05	−0.13	0.19	0.48	0.10	0.31	*0.07*	−0.03	0.34
1960–1973	−0.11	0.06	−0.22	−0.26	0.07	−0.16	*−0.09*	0.39	0.13
1973–1980	−0.63	−0.34	−0.47	0.07	−0.05	−1.15	*−0.15*	*0.60*	0.19
1981–1990	−0.22	−0.24	−0.19	0.09	*0.57*	0.18	*0.12*	*0.55*	0.25
1991–2000	−0.12	0.26	−0.44	−0.27	*0.61*	0.03	*0.13*	*0.51*	−0.35
1991–1995	−0.50	−0.38	−1.00	−1.44	0.49	−0.57	−0.47	0.52	−0.26
1996–2000	0.09	0.54	0.07	0.54	0.68	0.37	0.41	0.50	−0.44

[a]Rows 1–4: West Germany; row 5: United Germany.
Source: Computed as GDP growth (from Table 2) minus hourly labour productivity growth (from Table 1) divided by GDP growth.

This labour-intensive growth of GDP in Table 3 is just the flipside of the crisis of labour productivity growth seen in Table 1. In other words, the powerful and often-admired job machines in the US and in the Netherlands were caused by a severe decline of labour productivity growth. In the following, we give theoretical arguments why, in our view, reduction of wage-cost pressures due to changes of wage policy and wage-cost-saving flexibilization of labour relations are at the heart of the productivity crisis in the US and in the Netherlands.

Theoretical Arguments

Various parts of economic theory suggest that there is a causal link from wage growth to innovation and labour productivity growth, notably:

(i) In standard *neo-classical theory*, an increase in the relative price of labour leads profit-maximizing firms to substitute capital for labour, shifting along a given production function (representing the current state of technology), until the marginal productivity of labour equals the given real wage. Causality in this argument runs from relative factor prices to choice of technique and hence productivity.

(ii) According to the theory of *induced technological change*, a higher relative wage rate increases the labour-saving bias of newly developed technology (Hicks, 1932; Kennedy, 1964; Ruttan, 1997).

(iii) In the *Schumpeterian theory of creative destruction*, one can argue that innovating firms (compared to their non-innovative counterparts) can better live with an aggressive wage policy from trade unions and with rigid labour markets, as they possess market power. Their market power is due to monopoly rents from unique product and process knowledge that act as an entry barrier to their markets (Geroski *et al.*, 1993). Higher real-wage growth thus enhances the Schumpeterian process of creative destruction, in which innovators push out non-innovators. Conversely, weak wage growth and flexible labour relations protect weak firms and low-quality entrepreneurs, increasing the likelihood of their survival. While this is favourable for employment in the short-run, it leads to a loss of innovative dynamism (Kleinknecht, 1998).

(iv) In *demand-driven models of technical change* (Schmookler, 1966; for a recent survey and empirical support see Brouwer & Kleinknecht, 1999), higher effective demand raises innovative activity, labour productivity[2] and economic growth. This implies that wage restraint or downward wage flexibility may impede innovation as far as it leads to a lack of effective demand.

(v) Within an *endogenous growth framework* (e.g. Foley & Michl, 1999, pp. 288–298), a profit-maximizing firm's decision to invest in (labour productivity increasing) R&D, can be shown to depend on the share of wages in total costs. The higher the wage share, the more profitable it becomes to devote resources to increasing the productivity of labour.

(vi) According to recent research in management and industrial relations, workers can be motivated to provide above-normal effort through incentives that express the commitment of the firm to its workforce. These incentives include high base wages and employment security. When adopted as part of a cluster of organizational and management practices (including decentralization of decision-making and extensive

training), these incentives have significant effects on innovation, productivity growth and on financial performance (Appelbaum *et al.*, 2000; Gratton *et al.*, 1999; Gratton, 2000; Huselid, 1995; Michie & Sheehan, 1999; Pfeffer, 1998).

A common element in all theories is that they propose a positive causal relation between real wage growth and labour productivity growth. Some of these theories point to a direct link between wages and labour productivity growth. Others, such as the creative destruction argument, suggest that overall innovation activity may slow down in response to lower wage cost pressure. These points give a degree of plausibility to the argument that the named changes in wage bill pressure in the US and in the Netherlands may account for the low labour productivity growth visible in Table 1 (see also Naastepad & Kleinknecht, 2004, for a more detailed empirical assessment of the Netherlands). One should note that, in the US, the ICT boom induced a rise of labour productivity growth during the second half of the 1990s. It has been argued, however, that this rise is confined to the ICT sector itself and to closely related sectors. The broad range of classical manufacturing and service sectors (the "old economy") continues to experience a productivity crisis (Gordon, 2000).

In addition to the earlier arguments about the influence of wage-cost pressure on innovation and productivity, one could argue that flexibilization of labour relations itself might have a negative impact on innovation. On the one hand, one could argue that flexible hiring and firing and a high labour turnover might favour a firm's innovation performance: Firms can more easily replace unproductive workers by more productive ones and a larger inflow of new people might enrich the pool of a firm's innovative ideas and open up new networks. On the other hand, highly flexible labour also has its disadvantages. For example, a permanently high rate of people joining and leaving a firm could diminish social cohesion and trust, increasing the danger of moral hazard and opportunistic behaviour. In other words, such flexibility will diminish social capital, forcing firms to invest more money in monitoring and control. Moreover, the so-called "hold up" problem could become more relevant: As labour relations are (expected to be) of shorter duration, employers and employees might be more reluctant to invest in them. For example, the employer might hesitate to invest in the training of flexible workers, but the employees themselves might also invest less in firm-specific knowledge, networks, trust, etc. High external mobility of people increases the probability that one cannot (fully) appropriate the benefits of such investment.

Flexible and short-run labour relations may also favour the leaking of trade secrets and of technological knowledge, which may discourage investments in R&D and innovation. In other words, high (external) labour market flexibility could aggravate the problem of market failure due to positive externalities. A high labour turnover could be particularly harmful for firms with a "routinized" (as opposed to an "entrepreneurial") innovation regime. A routinized innovation regime depends on continuous accumulation of knowledge (including "tacit knowledge") that is a source of successful incremental innovation. In other words, what a firm is "good at" today depends on what type of knowledge it happened to accumulate in its past history (Dosi, 1988). Moreover, the quality of a firm's services could also suffer from a high personnel-turnover since frequent changes of personnel might cause problems of information transfer between people leaving the firm and people coming in. A firm's historical memory could become weaker. Such arguments help to explain the low-productivity-high-employment growth path in the US and in the Netherlands, as shown in Table 4.

Table 4. Growth of value added (GDP) per working hour and the growth of hours worked per 1% GDP growth (average annual percentage changes)

	Growth of GDP per working hour:			Employment elasticities of GDP growth (growth of working hours divided by GDP growth):		
	EU-14[a]	NL	US	EU-14[a]	NL	US
1950–1960	4.2	4.2	3.6	0.07	0.10	−0.03
1960–1973	5.7	4.5	2.6	−0.09	0.07	0.39
1973–1980	3.0	2.5	*1.0*	−0.15	−0.05	*0.60*
1981–1990	2.1	*1.0*	*1.5*	0.12	*0.57*	*0.55*
1991–2000	2.2	*1.1*	*1.6*	0.13	*0.61*	*0.51*
1991–1995	2.3	1.1	1.1	−0.47	0.49	0.52
1996–2000	2.0	1.1	2.0	0.41	0.68	0.50

[a]EU, excluding Luxemburg.

Evidence from Firm-level Studies

Our argument that the flexibilization of labour relations itself might have a negative impact on innovation and productivity growth is supported by empirical literature. For example, empirical studies of Human Resource Management (HRM) practices and of industrial relations suggest that "high trust" cooperative labour relations lead to higher productivity growth (see Huselid, 1995; Delaney & Huselid, 1996; Appelbaum *et al*., 2000; Lorenz, 1992, 1999; Fernie & Metcalf, 1995; Laursen & Foss, 2003). Likewise, results from (controlled) economic experiments indicate that protection against dismissal may enhance productivity performance, as secure workers will be more willing to cooperate with management in the development of the production process and in disclosing their (tacit) knowledge for the firm (see Gächter & Falk, 2002). Our argument is also in line with the results of micro-econometric studies on the probability of innovating by Michie and Sheehan (1999).

A recent study in the Netherlands is Kleinknecht *et al.* (2006), who estimated the impact of internal ("functional") forms of flexibility and of external ("numerical") forms of flexibility (i.e. high shares of people on temporary contract or a high turnover of personnel) on (i) wage costs, and (ii) growth of sales of Dutch firms. Their indicator of internal flexibility measures the percentage of personnel that changed their jobs or departments within the firm. Such flexibility can be taken as a proxy for functional (other than numerical or external) flexibility. Such functional flexibility might be more typical for "Rhineland" rather than for "Anglo-Saxon" labour relations. The main findings of Kleinknecht *et al*. (2005) can be summarized as follows:

1. External (numerical) forms of flexibility
   - Both firm-level as well as individual worker-level wage equations (with controls for age, education, sector etc.) show that *numerical* forms of flexibility yield substantial savings on a firm's wage bill, while *functional* flexibility does not.
   - While yielding savings on wage bills, numerical flexibility leads to higher job growth, but does *not* translate into higher sales growth.

- The latter point suggests that numerical flexibility appears to be related to lower labour productivity growth (the effects being slightly different for innovating versus non-innovating firms): Firms that have a high turnover of personnel do not realize significantly higher sales growth; and the same holds for firms that employ many personnel on temporary contracts (without a perspective of tenure). Seemingly, advantages from lower wage costs are more or less compensated by losses on various forms of social capital: An increased turnover of workers with short-run commitments leads to diminished trust, loyalty and identification with the firm, creates "*hold-up*" problems and leads to increased market failure due to easier leaking of knowledge (i.e. positive externalities).

2. Internal (functional) forms of flexibility
   - Such flexibility is associated with significantly higher sales and employment growth, in spite of paying higher wages. The effect of internal flexibility on sales growth is highly significant among firms that perform some R&D and is weakly significant among non-R&D performers. By handling internal and functional (other than external or numerical) flexibility, innovators invest in trust and loyalty of their personnel, which is favourable for the accumulation of (tacit) knowledge and reduces the leaking of knowledge to competitors.

This analysis of firm-level and worker-level data supports the view that wage-bill-saving flexibilization of labour markets might indeed create lots of jobs, but that this is likely to happen at the expense of labour productivity growth, raising serious doubts about the long-run sustainability of a low-productivity-high-employment growth path.

The evidence from firm-level data comes close to conclusions by Buchele and Christiansen (1999). Using slightly different indicators and highly aggregated macro data, they demonstrate that the Anglo-Saxon model may be strong in creating employment, but weak in labour productivity growth, while the opposite holds for the Rhineland model: "We have argued ... that while more highly regulated European style labour market institutions may inhibit employment growth, they also promote productivity growth. And while less regulated US style labour markets my promote employment growth, they also inhibit productivity growth" (Buchele & Christiansen, 1999, p. 323).

Summary and Conclusions

Summarizing this article, one can argue that more flexible labour markets and the reduction of wage cost pressure indeed work as neo-classical theory predicts: They can lead to higher job growth. However, they are likely to do so at the expense of innovation and labour productivity growth. One should remember that an economy can grow only in two ways: (1) either by working more hours or (2) by producing more value added per hour worked (i.e. by technical change). Hence the two parts of Table 4 are just two sides of the same coin. A low growth of GDP per hour worked (i.e. low labour productivity growth) in the Netherlands and in the US coincides with a high growth of the numbers of hours worked per unit of GDP growth. The impressive rates of job growth in the two countries coincide with a crisis of labour productivity growth.

Why should we be concerned about this low-productivity-high-employment growth path?

First, the six theoretical arguments mentioned earlier suggest that low productivity growth is essentially caused by a lack of modernization of capital stock, i.e. by a slow speed of adoption of labour-saving technology and associated learning processes. In the long run, such a lack of modernization will make an economy vulnerable. Technologically backward factories are the first to be closed down in times of prolonged recessions.

Second, the highly labour-intensive growth path may lead to labour scarcity. For example, around the year 2000, the Netherlands had achieved full employment. In response to reaching full employment (and a tight labour market), wages in the Netherlands went up. While trade unions still tried to keep wage increases modest, employers paid many people above the level determined in collective wage agreements negotiated by trade unions. Scarcity of labour forced them to do so. This brought the low-productivity-high-employment growth path in danger. In the short run, wage increases were not matched by corresponding labour productivity growth and this contributed to a deteriorating foreign-trade position. In principle, such a problem might become relevant for every development model that competes on low-factor costs rather than on quality and innovation: If successful, certain factors of production will become scarce; scarcity will drive up factor prices and the model becomes self-destroying.

Finally, the earlier examples may be of broader relevance. Numerous mainstream economic think tanks repeatedly propagate that achieving more flexible labour markets should solve the European unemployment problem. This often includes a plea for reduction of wage costs by easier hiring and firing, by bashing trade unions and by greater (downward) wage flexibility. One should realize that, here again, there is no free lunch. The examples of the US and the Netherlands show that flexibilization of labour markets and sacrificing wage increases indeed have led to higher job growth, but this job growth was hardly due to higher overall GDP growth. It came mainly from lower GDP growth per hour worked, which required many more hours to be worked. While such employment creation looked successful in the short run, mainstream economists still seldom recognize the long run structural problem involved.

The employment elasticities in Table 3 indicates that there have been periods (1980s and 1990s) when GDP growth contributed only modestly to the growth of labour hours in Europe. In the 1960s and 1970s, labour productivity growth was even so high that high rates of GDP growth were accompanied by a slightly negative growth of total labour hours in various countries. In principle, such a jobless (or even job-destroying) growth does not need to be a problem. If high-speed labour-saving technical change allows the production of more value added with little extra (or even diminishing) labour input, it is an almost natural solution to use labour productivity gains for a collective shortening of standard working hours, rather than for wage increases. In other words, if trade unions want to reduce European unemployment, they might choose to keep real wages constant and use labour productivity gains for the financing of reduced standard labour hours. In principle, this does not need to be a higher cost to firms than keeping labour hours constant and increasing real wages.

This calls for a social pact between trade unions and employers. Such a pact might commit both parties to use large parts of annual labour productivity gains to finance reduced working hours rather than for increasing real wages. This would imply that, without sacrificing labour productivity growth, we would obtain an extremely labour-intensive growth path. This approach would be a more intelligent solution to the

unemployment problem than the Dutch and US way: creating jobs by reducing wage-cost pressures, thereby giving negative incentives to labour-saving technical change.

Notes

1. We shall argue that achieving full employment had to do with low productivity growth, but there are two other factors that also account for high job growth. First, it has frequently been documented that full employment was also achieved by creating large numbers of part-time jobs (see recently Salverda, 2005). Second, during the 1990s, rapidly rising housing prices, combined with favourable tax incentives, lead to a strong growth of private mortgage debt. This is also referred to as the Dutch "Mortgage Keynesianism". Simulations with the Morkmon model of the Dutch Central Bank (2002) suggest that private credit expansion caused about 1% extra gross domestic product (GDP) growth per year around the turn of the century. Nonetheless, long-run growth in the Netherlands hardly differs from the EU average (see Table 2).
2. The demand-pull argument (formulated with respect to patenting and innovation) has an obvious parallel with earlier work on Verdoorn's Law (see Verdoorn, 1946; Kaldor, 1966, 1967 or McCombie *et al.*, 2002).

References

Appelbaum, E., Bailey, T., Berg, P. & Kalleberg, A. L. (2000) *Manufacturing Advantage. Why High-Performance Work Systems Pay Off* (Ithaca, NY: Cornell University Press).

Brouwer, E. & Kleinknecht, A. (1999) Keynes-plus? Effective demand and changes in firm-level R&D, *Cambridge Journal of Economics*, 23, p. 385–391.

Buchele, R. & Christiansen, J. (1999) Employment and productivity growth in Europe and North America: The impact of labour market institutions, *International Review of Applied Economics*, 13(3), pp. 313–332.

Jansen, W. J. (2004) Loonmatiging schaadt productiviteitsontwikkeling niet (in Dutch), *Economisch Statistische Berichten*, 89, p. 410.

Delaney, J. T. & Huselid, M. A. (1996) The impact of human resource management practices on perceptions of organizational performance, *The Academy of Management Journal*, 39(4), pp. 949–969.

Dosi, G. (1988) Sources, procedures and microeconomic effects of innovation, *Journal of Economic Literature*, 26, pp. 1120–1171.

Dutch Central Bank (DNB) (2002) Vermogensbeheer Nederlandse gezinnen onder de loep, *Quarterly Report of the Central Bank of the Netherlands* (in Dutch), June, pp. 29–38.

European Commission (2004) *Innovation in Europe: results for the EU, Norway and Iceland: data 1998–2001* (Luxembourg: European Communities).

Fernie, S. & Metcalf, D. (1995) Participation, contingent pay, representation and workplace performance: Evidence from Great Britain, *British Journal of Industrial Relations*, 33(3), pp. 379–415.

Foley, D. K. & Michl, T. R. (1999) *Growth and Distribution* (Cambridge, MA: Harvard University Press).

Gächter, S. & Falk, A. (2002) Reputation and reciprocity: Consequences for the labour relation, *Scandinavian Journal of Economics*, 104(1), pp. 1–27.

Geroski, P. A., Machin, S. & van Reenen, J. (1993) The profitability of innovating firms, *Rand Journal of Economics*, 24, pp. 198–211.

Gordon, R. (2000) Does the 'New Economy' measure up to the great inventions of the past?, *Journal of Economic Perspectives*, 14(4), pp. 49–74.

Gratton, L. (2000) *Living Strategy. Putting People at the Heart of Corporate Purpose* (London: Prentice Hall).

Gratton, L, Hailey, V. H., Stiles, P. & Truss, C. (1999) *Strategic Human Resource Management. Corporate Rhetoric and Human Reality* (Oxford: Oxford University Press).

Hicks, J. R. (1932) *The Theory of Wages* (London: Macmillan).

Huselid, M. A. (1995) The impact of human resource management practices on turnover, productivity, and corporate financial performance, *Academy of Management Journal*, 38(3), pp. 635–672.

Jorgenson, D. W. & Stiroh, K. L. (1999) Information technology and growth, *American Economic Review*, 89, pp. 109–115.

Kaldor, N. (1966) *Causes of the Slow Rate of Economic Growth in the U.K.* (Cambridge: Cambridge University Press).

Kaldor, N. (1967) *Strategic Factors in Economic Development* (Ithaca, NY: Cornell University Press).
Kennedy, C. (1964) Induced bias in innovation and the theory of distribution, *Economic Journal*, 74, pp. 541–547.
Kleinknecht, A. (1990) Are there Schumpeterian waves of innovation?, *Cambridge Journal of Economics*, 14, pp. 81–92.
Kleinknecht, A. (1998) Is labour market flexibility harmful to innovation?, *Cambridge Journal of Economics*, 22, pp 387–396.
Kleinknecht, A., Oostendorp, R. Pradhan, M. & Naastepad, C. W. M. (forthcoming in 2006) Flexible labour, firm performance and the Dutch job creation miracle, *International Review of Applied Economics*.
Laursen, K. & Foss, N. J. (2003) New human resource management practices, complementarities, and their impact on innovation performance, *Cambridge Journal of Economics*, 27(2), pp. 243–263.
Lorenz, E. H. (1992) Trust and the flexible firm: International comparisons, *Industrial Relations*, 31(3), pp. 455–472.
Lorenz, E. H. (1999) Trust, contract and economic cooperation, *Cambridge Journal of Economics*, 23(3), pp. 301–316.
McCombie, J. S. L., Pugno, M. & Soro, B. (2002) *Productivity Growth and Economic Performance: Essay's on Verdoorn's Law* (London: Macmillan).
Michie, J. & Sheehan, M. (1999) HRM practices, R&D expenditure and innovative investment: Evidence from the UK's 1990 workplace industrial relations survey (WIRS), *Industrial and Corporate Change*, 8(2), pp. 211–233.
Naastepad, C. W. M. & Kleinknecht, A. (2004) The Dutch productivity slowdown: The culprit at last?, *Structural Change and Economic Dynamics*, 15, pp. 137–163.
Pfeffer, J. (1995) *Competitive Advantage through People. Unleashing the Power of the Work Force* (Boston: Harvard Business School Press).
Pfeffer, J. (1998) *The Human Equation. Building Profits by Putting People First* (Boston, MA: Harvard Business School Press).
Ruttan, V. W. (1997) Induced innovation, evolutionary theory and path dependence: Sources of technical change, *Economic Journal*, 107, pp. 1520–1529.
Salverda, W. (2005) The Dutch model: Magic in a flat landscape?, in: U. Becker & H. Schwartz (Eds) *Employment Miracles*, pp. 39–64 (Amsterdam: Amsterdam University Press).
Schmookler, J. (1966) *Invention and Economic Growth* (Cambridge, MA: Harvard University Press).
Verdoorn, P. J. (1949) Fattori che regolano lo sviluppo della produttivita del lavoro, *L'Industria*, 1, pp. 3–10.