Labour Market Flexibility, Productivity and National Economic Performance in Five European Economies

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1 Motivation of the Study

In the last two decades, the conventional wisdom has been that the EU economy and labour market are "sclerotic", in stark contrast to the supposedly dynamic American economy and labour market. This so-called Euro-sclerosis is manifested in the following four facts[1]:

- *Lower economic growth in the EU than in the US:* the Gross Domestic Product (GDP) at constant 1995 market prices of the EU-15 countries increased by 2.3 per cent per year during 1981–2000; the growth rate of US real GDP during this period was significantly higher: 3.3 per cent per annum.

- *Lower employment growth, higher unemployment rates:* On average, in the last two decades, the EU has experienced lower growth rates of employment (persons employed) and a markedly higher unemployment rate than the US. During 1961–2000, the number of persons employed increased by 0.5 per cent per year in the EU against an annual increase of 1.7 per cent in the US. On average, during this period, 9.5 per cent of the EU labour force was unemployed against "only" 6.4 per cent unemployment in the US. Only a part of the inferior labour market performance of the EU (vis-à-vis the US) can be attributed to its lower rate of GDP growth.

- *Declining technological dynamism in the EU vis-à-vis the US:* On average, particularly during the 1990s, the EU has started to lag behind the US in terms of investment growth, technological change, innovativeness, business dynamism, and — consequently — labour productivity growth (see European Commission (2003), pp. 19–20). While EU annual labour productivity growth (measured as growth of value added per person employed) was higher than US productivity growth during the 1980s (1.9 per cent as compared to 1.3 per cent), the growth rate of EU productivity decelerated and the US productivity growth accelerated during the 1990s, reversing relative performance: US productivity growth in the 1990s was 1.8 per cent per year, while European productivity growth was 1.7 per cent per year. The change in relative performance was particularly dramatic after 1995: EU productivity growth amounted to 1.4 per cent during 1996–2000, whereas US productivity growth was 2.4 per cent per year.

- *Loss of international competitiveness:* Because of its lagging labour productivity growth and because average real wage growth has been significantly higher in the EU than in the US, Europe's competitive position vis-à-vis the US has deteriorated over time. This, in turn, has added to Europe's employment problems.

The reasons for the superior performance of the US economy were widely seen in its liberal, free-market approach: low (real) wage growth, flexible labour markets, and high and increasing income differentials. Accordingly, major economic institutions (such as the IMF, the World Bank, and the OECD) attributed Europe's relatively poor growth, employment and technological performance to the European Social-Economic Model, which includes corporatist and often centralised collective bargaining, relatively high employment protection, and a strong role of the State and of labour unions in the economy. Based on this diagnosis, the standard prescription, from the mid-1980s onwards, has been that the EU follow the American (supply-side) model, i.e. deregulate and invigorate labour markets, reduce the role of government and the social partners (employers'organisations and labour unions), and — most importantly — reduce real

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[1]Data are taken from the European Commission (2001a).

wage growth. In this view, the implementation of such structural reforms has become even more urgent in light of the significant trend toward globalisation and the associated increase in international (labour cost) competition.

During the last decade, many EU countries have begun to implement the recommended structural reforms of their national labour markets: "tackling wage bargaining structures; training and activation policies, benefit levels and eligibility criteria; and high levels of general and labour taxation" (European Commission (2003), p. 14). The aim of these reforms, which were formalised in the so-called Lisbon strategy in March 2000, is to improve the overall business environment in order to strengthen the entrepreneurial culture, remove constraints on the exploitation of new technologies, and raise firm investment and productivity growth; the ambitious aim is to make the EU the world's most dynamic and competitive economy by 2010.

Implicit in the proposed structural reforms (and in the Lisbon strategy) is the assumption that real wage restraint and labour market flexibilisation will result in both increased employment growth and increased labour productivity growth. That is: the *net* (macro-economic) effect of cutting down (real) wage growth and improving firm profitability is a rise in real GDP growth, in employment and in productivity growth. In support of this, a recent European Commission (2003, p. 14) report claims that there "is strong evidence that the countries that have made the strongest progress are those that have undertaken wide ranging reforms."

This Theme Paper investigates this claim, from a *long-run macro-economic perspective*, both theoretically and empirically. Doing so, we focus on a few small and open European countries: Finland, Greece, Ireland, the Netherlands, and Switzerland. In each of these countries, but in different ways and to different degrees, as argued in detail by Boucher and Wickham (2003), the structure of the Social-Economic Model was reformed by the incorporation of parts of the Anglo-American neo-liberal model. But this led to significantly different (macro-economic) results. Of these countries, only Finland and Ireland have been able to create above–EU–average GDP growth, employment growth and productivity growth during the period 1980–2001; but unemployment rates in these two countries remain above the EU average. The economy of the Netherlands performed better than the EU average in terms of GDP and employment growth and of unemployment reduction (but not productivity growth). The Swiss economy has been successful in terms of relatively high employment growth and a remarkably low rate of unemployment, but its GDP growth and productivity growth were below the EU average. During 1980–2001, Greece, in many respects a special case (see Tsipouri et al. (2002)), has experienced above–EU–average employment growth, but below–average GDP and productivity growth.

This variety in country experiences with structural reforms raises the central question: To what extent has the long-run economic performance of these five FlexCom countries (and the growth of employment and labour productivity in particular) been influenced by the structural reforms aimed at reducing real wage growth by introducing more labour market flexibility? Before proceeding, it is important to note that flexibility here refers to the "liberalisation" of job protection legislation, the reduction of severance payments, the lowering of the minimum wage, the scaling-down of the social security system, and the introduction of most types of numerical flexibility, such as part-time work or the use of temporary agency workers. The principle aim of increased flexibility, so defined, is to reduce unit labour cost growth.

1.1 Theoretical Background

From a macro-economic perspective, the essential aim of real wage growth restraint, to be achieved by increasing labour market flexibility in neo-liberal fashion, is to reduce the growth

rate of unit labour costs. This reduction in unit labour costs, in turn, is argued to have the following two positive macro-economic effects:

- A fall in (the growth rate of) unit labour costs implies an increase in (the growth rate of) the profit share. Improved profitability, in turn, will raise (private) investment, which will not only increase GDP (and employment) growth, but also speed up the pace of technological change and raise productivity growth.

- A fall in (the growth rate of) unit labour costs will lead to an improved international competitive position (assuming that the labour costs of the competing countries remain unchanged). Export growth will increase, which will raise GDP and employment growth.

Hence, following this argument, by increasing labour market flexibility and reducing real wage growth, countries can simultaneously achieve high employment growth and high labour productivity growth — increasing flexibility thus constitutes a clear "win–win strategy".

This mainstream argument in favour of real wage restraint and labour market flexibility — reflected in for instance EU, OECD and IMF policy statements — can be derived from neo-classical growth models and also from Keynesian (growth) models of a *profit-led* economy (assuming exogenous technology), as proposed by Bhaduri and Marglin (1990), Blecker (2002), and Taylor (1990). In both classes of models, a reduction in real wages unequivocally reduces unit labour costs, thus raising profits, investments and exports, and consequently leading to higher GDP and employment growth. However, since, in both classes of models, productivity (growth) is assumed to be exogenous (i.e. falling outside the scope of the model), nothing can be concluded concerning the possible effects of real wage restraint on productivity growth. The most that can be inferred, in the context of a model of a profit-led economic system, is that if investments increase (due to the rise in profitability), it is likely that the capital stock expansion will involve capital goods of the latest, most productive, "vintage"; through this so-called "vintage effect" of capital accumulation, labour productivity growth will rise. But as has been shown for the Netherlands (1970–1997) by Naastepad and Kleinknecht (2002), the productivity-enhancing vintage effect is relatively small.

However, there exist other and much more important macro-economic channels by which real wage growth restraint may retard labour productivity growth.[2] Following Naastepad and Kleinknecht (2002), we identify the following channels:

1. *Demand:* Innovative activity and labour productivity growth are stimulated by buoyant demand prospects — giving rise to demand-driven models of techn(olog)ical change, as suggested by Verdoorn (1949), Kaldor (1966), Schmookler (1966), and Geroski and Walters (1995). Real wage restraint may thus harm innovation to the extent that it leads to a loss of effective demand. The fact that labour productivity growth (often) is dependent upon the growth of aggregate demand, is known in the economics literature as the Verdoorn Law (following Kaldor's (1966) suggestion).

2. *Neoclassical substitution:* A fall in the real wage rate relative to the price of capital induces firms to substitute labour for capital, thus reducing the capital intensity of production. The decline in the capital intensity of production will in turn reduce the productivity of

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[2]There also exists an important *micro*-economic channel by which real wage growth restraint will retard productivity growth, namely via the endogeneity of labour effort and the quality of work. Whether for the positive inducement of better motivation or the negative inducement of fear of job loss, wages have been shown in a number of studies to positively influence labour productivity. For references, see Bowles and Boyer (1995).

labour. The causality in this relationship runs unambiguously from relative factor prices to the choice of technique.

3. *Induced technological change:* According to this theory, a higher relative wage rate increases the labour-saving bias of newly developed technology; this was first suggested by Hicks (1932) and later elaborated by, *inter alia*, Kennedy (1964) and Funk (2002)). In recent *endogenous growth* theory, induced labour-saving technological change is formalised in terms of a model of a profit-maximising capitalist's decision to invest in R&D; the R&D investment, which is assumed to lower labour costs by raising labour productivity, is taken 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 (for an elaboration, see Foley and Michl (1999)).

In sum, real wage restraint can — in principle — negatively affect labour productivity growth in two ways: first, from the side of (aggregate) demand (via the Verdoorn Law), and second, from the side of supply (via retarding the pace of induced technological change or of capital-labour substitution). Both demand and supply channels are potentially empirically important and, hence, need to be investigated.

This is done in this Theme Paper for the five FlexCom countries during the period 1961-2001, using a theoretical growth model developed in Naastepad (2003). On the demand side, the model builds on post-Keynesian/Kaleckian (growth) models of wage-led versus profit-led economic systems, but it extends them by adding a supply side in the form of a *Productivity Regime*. This Productivity Regime combines Kaldor's Verdoorn Law and Hicks's wage-cost induced technological progress, modelling labour productivity growth as a positive function of demand growth and real wage growth. The paper also builds on earlier, more or less comparable, "Demand and Productivity" Regimes proposed by Boyer and Boyer (1991), Setterfield and Cornwall (2001), and Taylor (1990). This macro-economic growth model, which combines a wage–led / profit–led Demand Regime and a Productivity Regime, is used to explore for each of the FlexCom economies whether real wage growth restraint raises output growth, productivity growth and employment growth.

1.2 Profit-Led Growth: The Lisbon European Council Strategy

In March 2000, the Lisbon European Council launched an ambituous decade-long strategy for economic, social and environmental renewal, aimed at giving Europe, by 2010, the most competitive, most productive and dynamic knowledge-based economy in the world (see European Commission (2003)). To improve the EU's competitive position and its potential to grow, EU member states should bring about (i) a sustained growth of employment (which will at the same time is believed to lead to greater social cohesion), and (ii) sustained labour productivity growth. To achieve both employment and productivity growth, structural reforms, particularly concerning the labour markets, are held to be necessary. The proposed labour-market reform, aimed at making the EU labour market more competitive and flexible, is essentially two-pronged.

Firstly, wage developments should "contribute to an employment-friendly policy-mix", which requires social partners to accept real wage increases that do "not exceed the growth of labour productivity, taking into account the need to strengthen, where necessary, and subsequently maintain, the profitability of capacity-enhacing and employment-creating investment" (European Commission (2001a), p. 70). In other words, real wage increases should be lower than productivity increases. It is expected that this will have two, desirable effects. First, it will

improve the profitability of firms, which will raise private investment (in new technologies). Second, it will lead to a decline in the (relative) unit labour costs of EU member states, which will improve their international cost competitiveness and raise EU exports. The growth of private investment and exports will result in a step-up of real GDP growth.

Secondly, to ensure that the increase in GDP growth indeed results in a rise in employment growth (and a decline in unemployment rates), EU labour markets should become more flexible. This requires significant labour market flexibilisation:

- "Increasing the flexibility of work arrangements, such as part-time and temporary contracts, [to] help create employment opportunities, especially for non-core groups [....]" (European Commission (2000a), pp. 21–22). What is necessary, in other words, is the modernisation of "work organisation [...], including flexible and annualised working hours, measures to facilitate part-time work and a review of tight job protection legislation and high severance payments" (ibid. pp. 65–66); for similar statements, see European Commission (2001a), p. 72.

- "Furthermore, an efficient and flexible working of the labour market, in general, is indispensable to reap the efficiency gains of ICT, to facilitate a swift reallocation of labour between enterprises into the new opportunities, and to foster "info-inclusion" for all." (European Commission (2000b), pp. 21–22).

- It is necessary to "ensure that any reductions in overall working time do not lead to increases in unit labour costs" (European Commission (2001a), p. 72); see for a similar statement: European Commission (2000a), p. 66.

The Lisbon strategy thus constitutes a clear example of a win–win strategy: by raising profits (by means of reducing real wage growth) and by the flexibilisation of labour markets, EU countries can simultaneously achieve increased GDP growth, higher employment growth (and lowered unemployment rates), and a step-up in productivity growth.

However, as argued in Naastepad (2003), this strategy will only be successful in all three respects under two stringent conditions:

1. The *Demand Regime* of the country under investigation is profit-led; this means that a reduction in real wage growth will (on balance) raise the growth rate of aggregate demand. And at the same time,

2. Its *Productivity Regime* includes only a relatively weak (positive) link between real wage growth and labour productivity growth; that is: the impact of real wage growth restraint on the pace of (induced) technological change is small.

Earlier research for the Netherlands (see Naastepad (2003) has shown that it cannot be taken it for granted that, empirically, both conditions are met.

2   The FlexCom Countries

The Theme Paper's analysis concentrates on the five smaller, dependent European economies included in the FlexCom project: Finland, Greece, Ireland, the Netherlands and Switzerland.

2.1 The Selection of Countries

The selection of these countries has been to a large extent pragmatic, based on the willingness and ability of research teams in European countries to participate in the project. Yet, there are clear macro-economic reasons why it is relevant, useful and interesting to analyse the interrelationships between labour market flexibility, productivity growth and national economic performance in the context of these five smaller European countries (for additional, methodological, reasons for the final sample of five countries, see Boucher and Wickham (2003), pp. 16–18).

First, a common structural characteristic of the FlexCom countries is their (relative) "smallness" (in terms of GDP). To see this, consider the respective shares in the GDP of the EU-15 in 2001: the share of Finland was 1.6 per cent; of Greece, 1.5 per cent; of Ireland, 1.3 per cent; of the Netherlands, 4.9 per cent; and of Switzerland, 2.7 per cent.[3] Because of their smallness, the FlexCom countries are more intensively exposed to global competitive pressures than the larger EU economies Germany, France and the UK. Because of their openness to international trade and finance, the FlexCom countries are likely to be more strongly profit-led than the larger, more autonomous EU countries, in which domestic (consumption) demand may play a larger role. If this is so, the proposed "win-win" strategy of real wage restraint and labour market flexibilisation would be well suited to the macro-economic context of these countries and likely to have a high pay-off in terms of increased GDP growth and higher employment and productivity growth.

Second, in response to world market pressures, the FlexCom countries were forced to reform their social-economic models, adjusting their national policies to the external environment, over much of the period 1980–2001. Hence, to different extents and in different ways, these countries have already experimented with policies of real wage restraint and labour market flexibilisation, and their experiences during 1980–2001 can be used to evaluate the macro-economic effects of these policies.

Third, as argued by Boucher and Wickham (2003), the FlexCom countries are also interesting, because they have followed different trajectories of social-economic change. Although real wage moderation was the core target of the social pacts in all five countries (see Auer (2000)), the FlexCom countries differ in the extent of real wage moderation achieved as well as in the ways in which it was achieved (more on this below). Importantly, our sample of countries includes two countries — the Netherlands and Ireland — that recently were hailed by the European Commission (2003) as standing out "as having implemented the most comprehensive set of labour market reforms". Structural reforms have been less comprehensive in the other FlexCom countries Finland, Greece, and Switzerland. These differences in nature and extent of structural reforms make it possible to compare and relate country-wise differences in macro-economic performance and in policies.

Finally, our sample of five also includes a significant country-wise variation in economic performance (more on this below). Two FlexCom countries, Finland and Ireland, have been among the most dynamic economies in the EU and the OECD, appearing relatively immune to the "Euro-sclerosis": their GDP, employment and productivity growth rates during the period 1980–2001 have been significantly above the EU average. The Netherlands, and its Polder Model in particular, has been praised for an "employment miracle", achieving a remarkable growth rate of employment of about 2 per cent per year during 1980–2001. Switzerland, in turn, has been remarkable for its continued low rates of unemployment. Greece, finally, is a special case, both

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[3]Compare these shares with the shares of the largest EU member states: France (16.5 per cent), the UK (17.4 per cent) and Germany (23.7 per cent). The GDP data are from the European Commission (2001a).

in terms of its evolving social-economic model and in terms of its continuing below–EU–average economic performance.

We will now briefly review the major changes in macro-economic performance and in the social-economic model in each of the FlexCom countries. To do so, we have collected data on key macro-economic indicators for two separate periods: the high-wage growth period 1961–80 and the period of real wage growth restraint: 1980–2001. Tables 1, 2 and 3 present these key indicators of the macro-economic performance of each country (and of the EU as a whole) for each (sub-)period.

2.2   Macro-Economic Performance 1961–1980

It will be clear from the Tables that the first period of the 1960s and the 1970s, compared to the second period 1980–2001, is a high-growth period. In all FlexCom countries (except Ireland) and in the EU, GDP growth, productivity growth and real wage growth are higher in the first than in the second period. What also strikes is that the performance of the FlexCom countries (with the exception of Switzerland) is superior to average EU performance in terms of income and productivity growth as well as in the growth of employment (measured in hours). Labour productivity growth was historically high and above the EU average in Finland, Greece, and Ireland. At the same time, unemployment rates were generally very low, particularly in the 1960s, when there was near full employment in Finland, the Netherlands, Switzerland and, on average, in the EU as a whole (see Table 3). Unemployment rates increased during the 1970s following the oil price shocks of 1973 and 1979, the rise in real input costs (energy prices and wages), the intensified foreign competition (following the collapse of the Bretton Woods system and the consequent deregulation of international financial markets), and the consequent decline in the profit share and in investment. But unemployment rates remained low as compared to unemployment rates in the 1980s and 1990s. It is noteworthy that, in the period 1961–1980, unemployment rates were significantly below the EU average in three FlexCom countries: Finland, the Netherlands and Switzerland.

This superior performance during 1961–1980 depended upon there being no constraint on aggregate demand, which grew without serious interruption during the 1960s and — with interruptions — during the 1970s (see Marglin and Schor (1990); Cornwall and Cornwall (2001)). Consumption growth, investment growth and export growth were all strong components of the aggregate demand growth in all FlexCom countries and in the EU as a whole:

- All FlexCom countries and the EU as a whole recorded relatively high growth rates of private consumption during the 1960s and 1970s (see Table 2). In most countries, consumption increased about as much as GDP, but in Ireland and the Netherlands, consumption growth was significantly higher than GDP growth — indicating a more than proportional contribution of domestic demand growth to GDP growth. Private consumption growth, in turn, was spurred by a relatively high growth of real wages (see Table 1). While average real wage growth (per hour worked) in the EU during this first period was 4.4 per cent per year, real wages increased by 5 per cent per year in the Netherlands, by 5.5 per cent in Finland, by 6.6 per cent in Ireland, and by 6.8 per cent in Greece. The high real wage growth was part of the post-World War II social compromise between trade unions and employers' associations, which entailed high growth rates of real wages as well as of productivity and aggregate demand, as a result of which profit *rates* could also increase (even as the *share* of profits in GDP became lower).

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- During 1961–1980, investment increased at a historically high rate. As can be seen, investment growth was particularly high in Ireland (a growth rate of 8.1 per cent per year) and in Greece (6.8 per cent), and lower (but still historically high) in Finland, the Netherlands and Switzerland. The rapid investment growth induced the capital goods industry to incorporate the latest technologies in its product and it may also have induced further inventions and innovations, thus speeding up technological progress (see Cornwall and Cornwall (2001)). The rapid investment growth, therefore, generated historically very high rates of productivity growth and — through the multiplier process — led to high GDP growth, justifying past investment and encouraging its continuation in a positive feedback loop.

- As shown in Table 2, on average, EU exports (in real terms) increased by 6.8 per cent per year, but the Irish (an export growth rate of 8.5 per cent per annum) and the Greek (11.7 per cent per year) export performance were even more remarkable. Exports of Finland and the Netherlands increased as rapidly as EU exports, while Swiss export growth (at 4.4 per cent per annum) was below the EU average. These high rates of export volume growth were in line with the rapid expansion of world trade (by 7.3 per cent per year) during the 1960s and 1970s, made possible — during the period 1961–73 — by a stable international trade and payments system (the Bretton Woods system), within which controls on international capital flows were used to protect fixed exchange rates and, at the same time, liberate macro-economic policy to pursue domestic goals (Setterfield and Cornwall (2002)).

A final important characteristic of the macro-economic performance of the FlexCom countries during 1961–1980 is the relatively low employment growth (in terms of hours worked). In Ireland and Finland, the number of hours worked actually declined in this period — as it did on average in the EU. In the other three countries of our sample, the growth rate of the number of hours worked was low (about 0.2 per cent per annum). The main cause of the low employment growth was a continued decline in the number of hours worked per person, brought about by a uniform shortening of the working week.

Economically, the end of the 1970s and beginning of the 1980s were very turbulent, marking the end of the first, high–growth, period and the start of the second, lower–growth, period. The turbulence had its origins in the domestic economies of the FlexCom and other EU/OECD countries and in world markets. Internationally, the oil price shocks of 1973 and 1979, the collapse of the Bretton Woods system and the consequent deregulation of international financial markets, and the sharp rise in world (real) interest rates in response to the adoption of highly restrictive monetarist economic policies in the USA and the UK had serious (negative) implications for economic activity, employment and policy in the FlexCom countries. Domestically, following the slowdown of productivity growth, the tightening of labour market conditions, and the significant fall in profit shares, tensions between trade unions and employers' associations mounted during the 1970s and eventually led to the collapse of the "old" social comprise (Marglin and Schor (1990); Cornwall and Cornwall (2001)). In the absence of understanding between the social partners, a wage/price inflation spiral afflicted many European countries in the late 1970s and early 1980s. Unemployment rates began to rise significantly.

2.3 Structural Reforms

As the first among the FlexCom countries, the Dutch economy began to experiment with real wage growth restraint and labour market flexibilisation in the early 1980s.[4]. The Dutch economy was thrown into an exceptionally deep crisis after the oil crisis of 1979, when Dutch exports plummeted as a result of an overvalued Dutch guilder (caused by the high gas revenues) and Dutch investment declined in response to declining profits. The fall in exports and investments had disastrous consequences for Dutch employment; the standardised unemployment rate shot up to more than 12 per cent of the labour force in 1981, and broad unemployment, which also includes workers in disability pension and early retirement schemes, rose to about 25 per cent. The recession and the high and rising unemployment put the labour unions in a tight corner and — in 1982 — made them agree to a central agreement with employers' organisations and government. In this so-called Wassenaar agreement, trade unions and employers' associations agreed upon a a national social pact in which the unions accepted that real wage increases remained below productivity increases, allowing firms to increase their profits and investment, while reducing working hours and implementing greater job sharing (see Visser and Hemerijck (1997); Auer (2000); Kleinknecht and Naastepad (2002)). This agreement of 1982 was followed by similar national social pacts (in 1993, 1996, 1997, and most recently in 2003), which involved further real wage restraint, decentralisation of (wage and working conditions) agreements to the firm level and further flexibilisation of labour in return for further working time reduction and enhanced employment and social security protection for atypical workers (part-time, fixed-term, and manpower agency workers). These national pacts have been extremely effective in restraining Dutch real wage growth. As shown in Table 1, during 1980–2001, annual real wage growth in the Netherlands has been 0.4 per cent (compared to an average growth rate of 5 per cent during 1961–80) — the lowest of all FlexCom countries and well below the EU average real wage growth rate of 1.8 per cent per year. While the moderation of real wage growth indeed was the core element of the Dutch structural reforms during the 1980s and 1990s, it has been accompanied by other "wide ranging reforms" including:

- The scaling-down of the social security system (perhaps more so than in the other FlexCom countries) by a significant tightening the eligibility conditions of the disability insurance and sickness leave (see Visser and Hemerijck (1997); Storm and Naastepad (2003)).

- A dramatic and sustained increase in numerical flexibility (see Kleinknecht and Naastepad (2002)): part-time and fixed-term work as a percentage of the total labour force amounted to 53 per cent in 2000, by far the highest in the FlexCom countries as well as the highest in the EU (see Table 4; the share of atypical employment in the EU labour force in 2000 was "only" 29.1 per cent, which in turn was higher than in Finland, Greece and Ireland.

Similar structural reforms were implemented in Finland[5] only after 1990, following the comparatively weak performance of the Finnish economy during the 1980s and the deep recession of 1991–94 (which was due to the sharp fall in Finnish exports, caused by the collapse of the Soviet Union and the OECD recession, and to the domestic financial crisis, caused by the rapid deregulation of the Finnish financial markets). As the Dutch model, Finland's social-economic

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[4]For a detailed historical analysis of Dutch labour market reforms during 1950–1997, see Visser and Hemerijck (1997); an analysis of the more recent period 1982–2002 is given by Storm and Naastepad (2003); see further: Auer (2000), Kleinknecht and Naastepad (2002) and Naastepad and Kleinknecht (2002)

[5]The review of structural reforms in Finland, Ireland, Switzerland and Greece draws on the excellent analysis and review by Boucher and Wickham (2003).

model involves a relatively centralised collective bargaining between trade unions, employers' confederations and the government on wages, working conditions and (changes in) the social security system. This collective bargaining system facilitated a consensus on a national strategy to revive economic growth and reduce rampant unemployment. This new strategy, aimed at creating a knowledge-based society, implied major structural reforms (see Castells and Himanen (2002) for a detailed analysis). First, as in the Netherlands, the welfare system was significantly scaled down by tightening eligibility, shortening benefit periods and extending waiting periods, reducing benefits and emphasising rehabilitation, activation and training. But unlike in the Dutch case, the resources were to be used for education, science and technology, and research and design policies. This focus on technology, innovation, and knowledge distinguishes Finland's structural reforms from those in the other FlexCom countries. Second, the degree of direct state intervention in the economy was reduced by policies of deregulation and privatisation, thus creating room for the private sector to expand. Third, real wage growth was moderated: real wage growth was reduced from 5.5 per cent per year during 1961–80 to 2.7 per cent per year during 1980–2001. But due to the high unionisation rates and the relatively centralised collective bargaining (Asplund (2003)), Finnish wage growth declined less than in the Netherlands (and less than in the other FlexCom countries). Likewise, the use of numerical flexibility increased by the increasing use of part-time workers, temporary agency work and temporal flexibility of working time adjustments, but to a much smaller extent than in the Dutch case. Hence, the Finnish labour market, though becoming more "flexible" over time, is still significantly less flexible than the Dutch one.

As in the case of Finland, major structural reforms came to Ireland only in the 1990s. As argued by Boucher and Wickham (2003), the Irish social-economic model has been reformed along neoliberal corporatist lines. The Irish model is becoming more corporatist (resembling the Dutch and Finnish models), because it is based on national agreements between the social partners, in which real wage moderation (benefiting the employers) is traded against tax cuts and increased labour market and workplace regulation including regulations that provide security for atypical workers — as happened in the Netherlands and Finland. Real wage growth was reduced from 6.6 per cent per year during 1961–80 to 3.5 per cent per year during the 1980s and 1990s. At the same time, and in apparent contradiction to the first tendency, the Irish model is becoming increasingly neoliberal, because it involves attracting foreign direct investment, by (mainly American) high technology firms, by means of low corporate taxes on profits, (comparatively) low wages, and a surplus of willing and flexible skilled workers. To be able to reduce taxes, while not allowing the government budget deficit to rise beyond EU-imposed restrictions, Ireland's already lean welfare system was further trimmed down, making its levels of social protection converge towards US levels. Numerical flexibility has increased significantly in Irish labour relations (see also Auer (2000)). The share of part-time employment in total employment almost doubled, increasing from 8.3 per cent in 1991 to 16.4 per cent in 2000 (see Table 4).

Unlike the Netherlands, Finland and Ireland, whose social-economic models have been fundamentally changed by incorporating parts of the neo-liberal model, Switzerland's social-economic model, until now, has remained largely unchanged (Arvanitis et al. (2002)). Compared to the other FlexCom countries, the Swiss model is decentralised and voluntarist; there are no national agreements or social pacts and free collective bargaining applies in particular to wage determination. While Swiss employers are strong, Swiss trade unions have been traditionally weak: their base has been fragmented with comparatively low and widely varying union density rates and collective bargaining coverage (Financieele Dagblad (2003)). Influenced by the OECD

recession of the early 1980s, the Swiss social partners agreed to moderate real wage increases; annual real wage growth was reduced to 1.6 per cent post-1980 (while it was 3.7 per cent per year during 1961–80). While Switzerland has maintained its liberalism in economic matters, the Swiss social welfare system has been gradually improved and extended to levels approximating those of other EU countries (see Boucher and Wickham (2003)) — quite unlike the significant reduction in social security entitlements in the Netherlands, Ireland, and to a somewhat lesser extent Finland. And again unlike the other FlexCom countries, Swiss labour relations have not become significantly more flexible over time. As shown in Table 4, numerical flexibility in terms of part-time employment has increased during the 1990s; but unlike in the other countries, the percentage of fixed-term contracts declined (Arvanitis et al. (2002)).

Finally, we turn to Greece, where structural reforms, implemented after the country's accession to the EU in 1981, have been profound and, in many ways, unique. Starting from initial conditions that deviated significantly from those prevailing in the other FlexCom countries around 1981, Greece has been transforming its social-economic model in two distinct ways. First, it changed from a state-led system, in which the state performed an extensive regulatory role and participated widely and directly in many economic activities, into a more market-led system involving indirect state regulation. This involved, *inter alia*, the termination of state financial support to public enterprises, the privatisation or closing down of state enterprises, and the complete liberalisation of the banking system (see Tsipouri et al. (2002)). It also involved changes in Greek labour relations. As part of its "Europeanisation", a new collective bargaining system was instituted in 1990, which helped to improve the interactions between the (strong) trade unions and employers'associations. Within this system, the Greek government has attempted (by enacting laws) to make the labour market more flexible, while at the same time improving public policies and offering compensation to the flexible work force in the form of better employment protection (as happened in the Netherlands and Ireland). Likewise, it has been attempted to enact laws linking real wage increases to productivity increases so as to prevent unit labour costs from increasing. However, the new collective bargaining system, while being successful in reducing real wage growth during 1980–2001 to 1.4 per cent per year (as compared to 6.8 per cent per annum during the 1960s and 1970s), was unable to prevent real wages from rising more rapidly than productivity growth (see Table 1), mainly due to the strength of Greek trade unions. The second way in which the Greek social-economic model has been transformed, was by the building-up of a more elaborate and extensive social welfare system (see Tsipouri et al. (2002)). Greece managed to do this, despite considerable less resources than the other FlexCom countries and without a fully functioning consensus decision-making process. It is the only FlexCom country, besides Switzerland, to show continuous increases in its welfare system expenditures (Boucher and Wickham (2003)).

2.4   Macro-Economic Performance 1980–2001

The structural reforms, described above, are generally held to have been very successful: it is claimed that the reforms, in the countries in which they were implemented, have led to a revival of GDP and employment growth and a reduction (compared to other EU countries) of unemployment. Thus, a recent European Commission (2003, p. 14) report identifies Ireland and the Netherlands, two of the FlexCom countries, as major examples of the success and effectiveness of the reforms.

Let us therefore look at the post-1980 macro-economic performance of these two and the other FlexCom countries in more detail. On the basis of Table 1, 2 and 3, we draw out the following major generalisations, characterising economic growth in these countries during the

last two decades:[6]

- Most significantly, from our perspective, real wage growth between 1961–80 and 1980-2001 declined significantly in all FlexCom countries (and most drastically in the Netherlands). In all countries, real wage moderation was hammered out as part of social dialogue (Auer (2000)). Real wage growth declined least in Finland (because of high unionisation rates) and in Ireland (as a result of skill and labour shortages, caused by the Irish growth boom of the second half of the 1990s). It declined most in the Netherlands and Greece.

- All FlexCom countries, with the notable exception of Ireland, experienced a significant decline in long-run productivity growth between 1961–80 and 1980–2001 (Table 1). The productivity growth decline was particularly dramatic in Greece and the Netherlands (both record a decline of 83 per cent); Swiss productivity growth between the first and second period declined by 57 per cent, more than the decline in average EU productivity growth of 50 per cent. Helped by its national strategy focused on technology, innovation and knowledge, and the consequent re-allocation of resources toward science and technology, education and R&D, Finland experienced a below-EU average productivity growth decline (of 31 per cent). Ireland, in contrast, managed to *increase* its productivity growth rate (by 5 per cent); Ireland's exceptional productivity performance reflects the country's success in attracting high-technology foreign firms.

- As a result of the fall in real wage growth, profitability, which in all FlexCom countries had declined significantly during the 1970s, improved considerably in Ireland, the Netherlands and Finland (Table 3), while it remained depressed (compared to the levels attained in the 1960s) in Greece and Switzerland. Dutch and Finnish profitability improved because real wage growth declined more than productivity growth; in Ireland, the profit share increased because productivity growth increased, while real wage growth declined. In Greece, profitability was not restored to earlier levels, because productivity growth and real wage growth declined by more or less the same amount. In Switzerland, profitability continued to decline over time, because real wage growth declined less than productivity growth. It is therefore not surprising that Swiss and Greek investment growth declined between 1961–80 and 1980–2001. But it is remarkable and puzzling that similar declines occurred in Finland, Ireland and the Netherlands, where profitability levels were to a very large extent restored to their earlier levels.

- Likewise, due to the fall in real wage growth, the growth rate of relative unit labour costs (RULC) of all FlexCom countries has been reduced considerably (Table 3). However, notwithstanding the lower RULC growth and contrary to expectation, export growth in four out of five countries is lower in the period 1980–2001 than during 1961–80 (Table 2).[7]

- In all FlexCom countries, the decline in real wage growth is associated with a decline in the growth rate of private consumption (see Table 2).

- As a result of the lower consumption, investment and export growth, real GDP growth in Finland, Greece, the Netherlands, and Switzerland is lower during 1980–2001 than during the 1960s and 1970s. Only Ireland managed to increase its GDP growth over time (by

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[6]More detailed country-wise analyses fall outside the scope of this Theme Paper, the nature of which is macro-economic. For country-specific analyses at the firm level, the reader may consult Boucher and Wickham (2003).

[7]Note that Irish export growth is higher in the second period than in the first period.

about 20 per cent). Ireland, Finland, and the Netherlands experienced a GDP growth rate that was higher than the EU average; Greece and Switzerland experienced below-EU average GDP growth.

- The growth rate of employment (in terms of hours worked) increased between 1961–80 and 1980–2001 in Greece, Ireland, the Netherlands, and Switzerland, while it remained unchanged in Finland (see Table 1). What is more, the total number of hours worked *increased in absolute terms* on an annual basis in the first four FlexCom countries during 1980–2001, while it declined marginally (by 0.3 per cent per year) in Finland. This is most remarkable in view of the fact that average EU employment growth (in hours) was close to zero during 1980–2001. This means that, compared to the EU average, four FlexCom countries (Greece, Ireland and the Netherlands, in particular) experienced a relatively employment-intensive GDP growth. This is particularly true for the Netherlands, where the number of hours worked during 1980–2001 increased by 1.7 per cent per year. Employment growth in terms of persons employed has been even higher than that in terms of hours worked in all FlexCom countries, reflecting the growing importance of part-time work. Part-time work, hence, is important for job growth and is, in Auer's (2000) words, "part and parcel of Dutch employment growth."

- It is true for all FlexCom countries that, despite the increase in employment growth over time, the average rate of unemployment is significantly higher in the 1980s and 1990s than in the period 1961–80 (see Table 3). This is partly caused by the decline in GDP growth over time. It is further remarkable that average unemployment rates in Finland, Greece and Ireland are higher than the (already high) EU average — notwithstanding the fact that Finnish and Irish GDP growth has been above average EU GDP growth and the fact that GDP growth in all three countries has been relatively employment-intensive. Unemployment rates (1980–2001) of the Netherlands and Switzerland were lower than the EU average.

It is difficult, if not impossible, to draw out conclusions on the basis of these generalisations without the help of a comprehensive theory (or model) of the causal (inter-)relationships between GDP growth, productivity and employment growth, and real wage growth. It would be incorrect, for instance, to conclude — on the basis of the above findings — that the decline in real wage growth has "led" to a decline in GDP growth; real wage growth restraint may have had a positive effect on GDP growth, but this effect may have been offset by negative influences on growth from other sources; or, alternatively, it may not have had any effect at all. What is needed, therefore, is a comprehensive conceptual framework within which the possible causal interrelations (and feedback effects) between the major macro-economic variables are specified. For each of the FlexCom countries, the specified relationships can then be econometrically estimated (testing whether or not the correlation between the variables is statistically significant different from zero, and, if so, how strong their association is). Finally, the resulting empirical model can be used to evaluate the macro-economic effects of real wage restraint for each country. The next Sections will present the model framework used as well as the countrywise econometric estimations.

However, while they cannot be used to draw out major conclusions in terms of "causes" and "effects", the generalisations, given above, do raise the following pertinent questions that should be answered by the empirical growth model analysis for the five FlexCom countries:

- Firm profitability in three of the FlexCom countries has significantly improved since the

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early 1980s, while relative unit labour cost have declined in all countries. Why has this not led to a revival in growth rates of real GDP?

- It appears that countries that managed to bring about the largest reductions in real wage growth, experienced the largest declines in labour productivity growth. Is this a coincidence? Or could it be that the strategy of real wage moderation and labour market flexibilisation has delayed investment in new technology and has led to in essence a low productivity growth–low wage growth trajectory? More generally, what has been the impact of real wage growth restraint on technological change and labour productivity growth? What explains the observed declines in long-run productivity growth rates?

- Employment growth in the FlexCom countries has been relatively high during 1980–2001. What are its causes? Is it a sign of economic dynamism?

3   Empirical Results

These questions are addressed using the theoretical growth model developed by Naastepad (2003), which gives a complete, dynamic specification of an economy's demand and supply sides. On the demand side, the model specifies a *Demand Regime*, which can be either wage-led or profit-led in nature — following Bhaduri and Marglin (1990), Taylor (1990), and Blecker (2002). On the supply side, the model specifies a *Productivity Regime*, which combines Kaldor's Verdoorn Law and Hicks's wage-cost induced technological progress. The model's Productivity and Demand Regimes are econometrically estimated for and applied to the five countries of the FlexCom project — Greece, Finland, Ireland, the Netherlands and Switzerland — in order to explain these countries' performance in terms of income, employment and productivity growth.

3.1   The Productivity Regime

The model's supply side or *Productivity Regime* describes labour productivity growth as a positive function of aggregate demand growth (reflecting the Verdoorn law) and real wage growth (reflecting the possibility that labour-saving technological change is "induced" by real wage increases); more or less similar specifications have been proposed by Boyer and Petit (1991), Setterfield and Cornwall (2001), and Taylor (1990).

Table 5 presents the estimation results for the Productivity Regime, obtained by Naastepad and Storm (2003). For all FlexCom countries, except Ireland, the goodness of fit (as indicated by R^2) is high. It can be seen that, in all countries considered, labour productivity growth is sensitive (in a statistically significant manner) to demand growth as well as real wage growth.

For Finland, Greece, Ireland and the Netherlands, the elasticity of productivity growth with respect to demand growth, which is known as the Verdoorn elasticity (after Verdoorn (1949)), is about 0.50 — which means that an increase in real GDP growth by one percentage point will lead to a rise in productivity growth of 0.50 percentage points. These findings are very much in line with available estimates of Verdoorn elasticities. The Verdoorn elasticity for Switzerland is relatively low: 0.20 (and statistically significantly different from zero).

Real wage growth is a (positive and statistically significant) determinant of productivity growth in all FlexCom countries, but its importance as a source of productivity growth varies considerably. In Finland and Greece, the estimated Hicksian induced technological progress elasticity is about 0.3; in Ireland, it is about 0.4. The impact of real wage growth on productivity growth is particularly high in the Netherlands (0.65) and even more so in Switzerland (0.92).

Real wage restraint therefore will have a negative impact on productivity growth by retarding the process of induced labour-saving technological change. The implication is that a reduction in the growth rate of real wages by one–percentage point will reduce labour productivity growth by 0.3 percentage points in Finland and Greece, by 0.4 percentage points in Ireland, by 0.65 percentage points in the Netherlands, and by as much as 0.9 percentage points in Switzerland. These are — clearly — non-negligible negative effects.

3.2   The Demand Regime

The *Demand Regime* is a description of how a change in the growth of unit labour costs (i.e. the difference between real wage growth and productivity growth) affects the growth rate of aggregate demand. For the moment, assume that productivity growth is given (and constant). Then, demand growth can be conceptualised as depending on real wage growth via three channels:

- *profitability*: a fall in real wage growth will increase the growth rate of profits; this will raise investment growth and hence increase demand growth;

- *international cost competitiveness*: a fall in real wage growth will reduce the growth of unit labour cost relative to competing countries; this will raise export demand, thus raising demand growth; and

- *income distribution*: a fall in real wage growth will reduce the growth of private consumption, if (and only if) the propensity to save out of wage income (denoted by σ_w) is smaller than the propensity to save out of profit income (denoted by σ_π). The reason is that a fall in real wage growth implies a redistribution of income from wages towards profits; private consumption demand will decline if $\sigma_w < \sigma_\pi$.

It should be noted that via the first two channels, a decline in real wage growth will have a positive impact on demand growth. But via the third, it will have a negative impact on demand growth. Thus, the *net effect* of a decline in real wage growth on demand growth depends on the strength of the combined "profitability" and "cost competitiveness" effects vis-à-vis the strength of the "distributional" effect.

The Demand Regime is said to be *wage-led*, if a decline in real wage growth leads to a decline in demand and output growth. The Demand Regime is, in contrast, *profit-led*, if a decline in real wage growth leads to a rise in demand and output growth.[8] It will be obvious that a policy of real wage growth restraint — in conjunction with labour market flexibilisation — will be effective only if the economy's Demand Regime is profit-led. For our analysis, it is therefore crucial to empirically determine the nature of the Demand Regime in each of the FlexCom countries. To do so, we will next investigate the impact of changes in the growth rate of real wages on (i) investment growth; (ii) export growth; and (iii) income distribution, savings and, hence, consumption growth.

3.2.1   Investment

A decline in real wage growth will, by definition, lead to a rise in firms' profits (assuming that labour productivity growth is constant) and this, in turn, may lead to an increase in investment, depending on the sensitivity of (private) investment to changes in profitability. In principle, it appears realistic to assume that firms' investment decisions are indeed influenced by expected

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[8]For an elaboration, see Bhaduri and Marglin (1990), Taylor (1990) and Naastepad (2003).

future profits as well as by firms' liquidity, both of which co-vary with current profits. The sensitivity of investment to profits is confirmed by many econometric studies (Bhaskar and Glyn (1995); Bowles and Boyer (1995)). Naastepad and Storm (2003) investigated the profitability-investment link for the five FlexCom countries using data for the period 1961–2000. Table 6 presents their estimated investment functions. Investment growth is assumed to depend on (a) demand (real GDP) growth (an accelerator term), and (b) profit share growth.

In all FlexCom economies, demand growth is a statistically significant determinant of the growth of private gross fixed investment. But for Greece, the Netherlands, and Switzerland, the obtained elasticities of investment with respect to aggregate demand are not statistically different from unity, implying that a one-percentage point rise in real GDP growth leads to a one-percentage point increase in investment growth. In Finland and Ireland, the elasticity of investment with respect to GDP is significantly higher than unity. Specifically, in Finland (Ireland), a rise in real GDP growth by one percentage point will raise investment growth by 1.27 (1.60) percentage points.

Profitability (profit share growth) turns out to be a statistically significant determinant of investment growth in Finland, the Netherlands and Switzerland. Dutch investment is found to be most sensitive to profitability: a one–percentage point increase in profit share growth will raise Dutch investment growth by 0.43 percentage points. In Switzerland and Finland, an equivalent rise in profit share growth will increase investment growth by 0.34 and 0.18 percentage points, respectively. For Greece and Ireland, the correlation between investment growth and profit share growth is statistically not significant, which suggests that there are other factors more important in determining investment growth than expected future profits and/or firms' liquidity. For Greece, these may include the rate of interest and credit constraints. For Ireland, where foreign direct investment is important, a relevant factor may be the availability of a skilled (English-speaking) labour supply. Taken as a whole, the estimates by Naastepad and Storm (2003) indicate what may seem surprisingly little responsiveness of investment to profits. The average elasticity value for the FlexCom countries is only 0.19. This estimate is in line, however, with the average elasticity value of 0.28 found by Bowles and Boyer (1995) for France, Germany, Japan, the UK and the US (1953–1987).

3.2.2 Exports

A decline in real wage growth will affect aggregate demand through its impact on relative unit labour costs and exports; the size of the effect will depend on the sensitivity of exports to changes in relative unit labour costs (RULC). The Lisbon strategy presumes that, as a result of the trend toward globalisation and the associated increase in international competition, exports are becoming more and more sensitive to costs. However, a number of studies have evaluated the impact of (relative unit labour) cost competitiveness on export performance (notably Amable and Verspagen (1995) and Carlin, Glyn and Van Reenen (2001)) and found a surprisingly low sensitivity of exports to labour cost changes. Naastepad and Storm (2003) investigated the responsiveness of exports to changes in (relative unit labour) costs for the five FlexCom countries (1961–2000).

For each of the countries, and using a sample of 18 OECD countries (1961–2001), they estimated the following export function (in growth rates):

(1) $\hat{e} = \epsilon_1 \hat{wt} + \epsilon_2 R\hat{U}LC,$

where $\hat{e}$ = the growth rate of export volume, $\hat{wt}$ = the growth rate of world trade volume, and $R\hat{U}LC$ = the growth rate of relative unit labour costs. $RULC$ is calculated by dividing the unit

labour cost for country j by a weighted average of the unit labour costs for all countries in the sample; export market shares are used as the weighting factor. The unit labour costs of country j, in turn, depend on (i) employee compensation (including non-wage labour costs), (ii) labour productivity per hour worked, and (iii) the dollar exchange rate (national currency per dollar).

In Table 7 appear the estimated export growth equations. World trade growth is found to be a statistically significant determinant of export growth in all FlexCom countries. The elasticity of exports with respect to the volume of world trade is not statistically different from unity for Finland, Ireland and the Netherlands, which implies that a one-percentage point rise in world trade growth will raise the rate of export growth of these countries by one percentage point. The same elasticity is significantly above unity for Greece and below unity for Switzerland, indicating a long-run rise in the Greek world market share and a long-run decline in the Swiss market share.

Remarkably, the estimated (relative unit labour cost) elasticities are statistically significant only for Finland (—0.26) and Switzerland (—0.04), but not significantly different from zero for Greece, Ireland and the Netherlands. Even the cost elasticities for Finland and Switzerland are quite small. The FlexCom country results are consistent with findings by Carlin, Glyn and Van Reenen (2001), who estimated the cost elasticity of export demand for 12 manufacturing industries across 14 OECD countries (1970–1992) and found an overall elasticity of approximately —0.27. They also estimated country-wise cost elasticities (see Table 8). For quite a few countries, notably Denmark, France, and Belgium, they obtained *positive* cost elasticities — these are examples of the "Kaldor paradox" (which refers to Kaldor's (1978) finding that the countries with the fastest improvement in export performance were those with the fastest increases in cost!). Two FlexCom countries, Finland and the Netherlands, are in their sample. For Finland, Carlin et al. obtain a statistically significant aggregate cost elasticity of —0.36, which compares to the estimate in Table 7 (of —0.26). For the Netherlands, their estimate is +0.16 and it is statistically not significant (as the estimate by Naastepad and Storm (2003) in Table 7). Carlin et al. further estimate the individual industry cost elasticities of export demand by country. The mean value of these industry elasticities for Finland was —0.17 and for the Netherlands —0.12. The low and often insignificant cost elasticities of export demand are therefore a structural characteristic of the OECD and FlexCom countries.

The implication of these findings is that there are important influences on export growth other than relative costs, most notably "technology" factors. Carlin et al. (2001, p. 155) find that relative investment shares have a marked effect on export market shares, which "supports the idea that technological improvements embodied in new capital goods promote export performance in ways that are not picked up by the productivity trends" and the consequent changes in relative costs. In support of this conclusion, they further find (p. 148) that high-tech industries (with high R&D intensity) are less sensitive to costs than low-tech industries.

3.2.3 Savings

The proposition that the rich save a higher fraction of their income than others both appeals to common sense and is supported by studies of family incomes and expenditures (see Bowles and Boyer (1995) for a review of studies). While it more or less has come to be taken as a sociological fact of life, requiring little explanation, the proposition has an important economic implication: Any redistribution of income from the rich to the poor classes will reduce savings and thus raise consumption demand and *vice versa*. In other words, through its impact on savings, changes in the distribution of income influence consumption and aggregate demand.

Within macro-economic theory, following Kaldor's (1957) suggestion, the proposition that

classes differ in their savings behaviour has been formulated in terms of differences in the propensities to save out of profit income (σ_π) and out of wage income (σ_w). That is: the two propensity hypothesis holds if $\sigma_w < \sigma_\pi$, i.e. the propensity to save out of wages is smaller than the propensity to save out of profits. It follows that if the two propensity hypothesis holds, any redistribution of income from wages to profits, for instance as a result of real wage moderation, will raise savings and reduce consumption and aggregate demand.

Table 9 presents the savings propensities out of wages and profits, estimated by Naastepad and Storm (2003) for the FlexCom countries (1960–2000). It can be seen that, for all countries, the estimated parameters of the savings function are consistent with the two propensity hypothesis, i.e. $\sigma_w < \sigma_\pi$. The difference ($\sigma_\pi - \sigma_w$) is statistically significant for all five countries. It is particularly large in Finland (0.70), the Netherlands (0.40), and Greece (0.30), which implies that, in these countries, the impact on aggregate demand of a redistribution of income from wages to profits will be relatively large. The difference is much smaller (but still statistically significantly different from zero) in Ireland and Switzerland, indicating a much smaller negative impact on aggregate demand of a redistribution from wages to profits.

On average for the FlexCom countries, the difference between the propensity to save out of profits and the propensity to save out of wages is 0.34. This compares with the average difference of 0.46 found by Bowles and Boyer (1995) for France, Germany, Japan, the UK and the US (1961–87). We must therefore conclude that the distribution of income affects aggregate demand through its impact on savings and consumption.

3.2.4   The Nature of the Demand Regime

As we have seen, the Demand Regime is a description of how a change in real wage growth (at a given rate of labour productivity growth) affects the growth rate of aggregate demand through its impact on:

- profitability and investment.

- international cost competitiveness and exports; and

- income distribution, savings and consumption.

Using the estimated model parameters of Tables 6, 7 and 9, it is possible to determine the elasticity of aggregate demand with respect to the real wage rate.[9] A positive elasticity then indicates a wage-led Demand Regime, while a negative elasticity indicates a profit-led Demand Regime. The elasticities thus obtained by Naastepad and Storm (2003) for the FlexCom countries appear in Table 10.

It can be seen that the Demand Regime is wage-led in Finland, Greece, Ireland and the Netherlands, i.e. a decline in real wage growth (real wage restraint) will result in a decline in the growth rate of aggregate demand. These findings are remarkable, as they contradict the widely held belief that small, open (so-called dependent) economies are inherently profit-led. Only the Swiss Demand Regime is profit-led, though marginally: a decline in Swiss real wage growth by one full percentage point will raise demand growth only by 0.03 percentage points.

In Finland, in particular, aggregate demand is significantly "wage-led": a decline in Finnish real wage growth by one percentage point will cause a decline in aggregate demand growth by 1.08 percentage points (via multiplier effects). The strong negative impact on demand of a decline in real wage growth in Finland has two causes:

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[9]The mathematical derivation of this elasticity is given in Naastepad (2003).

- The relatively large difference between σ_π and σ_w, due to which any redistribution of income from wages to profits leads to large increase in savings and a large decline in domestic consumption; and

- The insensitivity of Finnish investment to changes in profitability.

In Greece, Ireland and the Netherlands, a decline in real wage growth by one percentage point will have a smaller negative impact on demand growth: a decline of 0.15 percentage points in Greece, of 0.12 percentage points in Ireland, and of 0.18 percentage points in the Dutch aggregate demand.

However, what is most striking about the estimates presented in Table 10 is that, for four of the five economies studied (i.e. with exception of Finland), the elasticity of aggregate demand with respect to the real wage rate is close to zero and, in fact, may change sign — shifting from wage-led to profit-led or *vice versa* — in response to minor changes in the estimates. This being the case, it would be best to conclude not that the aggregate Demand Regimes of Greece, Ireland, the Netherlands and Switzerland are wage-led or profit-led, but rather that the effects on aggregate demand of an economy-wide change in the real wage rate in these countries are likely to be quite small.[10] This is an important conclusion, because it implies that, in these countries, a strategy of real wage growth restraint (and labour market flexibilisation) will be quite ineffective in bringing about an increase in real GDP and employment growth. It will be obvious that the same strategy, when implemented in Finland, will *reduce* GDP growth and employment growth.

4 Macro-Economic Analysis

The foregoing empirical analysis for the five FlexCom countries has shown that the strategy of real wage growth restraint will have significant demand-side as well as supply-side (productivity) effects. However, the final (general equilibrium) effects of the strategy on GDP growth, productivity growth and employment growth depend on how the economy's Demand Regime and Productivity Regime interact. These interactions are analysed and classified by Naastepad (2003). Based on this analysis, the next Section will outline the relevant demand-productivity growth interactions.

4.1 Demand–Productivity Growth Interactions

So far, the Theme Paper has followed a "partial equilibrium" approach when analysing the impact of a decline in real wage growth on, on the hand, the Productivity Regime, and on, on the other hand, the Demand Regime. Specifically:

- in evaluating the impact of real wage growth restraint on labour productivity growth (the Productivity Regime), we assumed aggregate demand growth to remain unchanged; and

- in evaluating the impact of a decline in real wage growth on aggregate demand growth (the Demand Regime), we assumed productivity growth to be constant.

But it will be clear that supply and demand interact, i.e.:

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[10]Bowles and Boyer (1995) reach a similar conclusion based on an analysis for France, Germany, Japan, the UK and the US.

- any change in productivity growth, caused by a decline in real wage growth, will have an impact on aggregate demand growth, because of its effect on (a) profitability and investment, (b) relative unit labour costs and exports, and (c) income distribution, savings and consumption. The consequent change in demand growth, in turn, will influence the rate of labour productivity growth via the Verdoorn relation; this will again have a feedback effect on demand growth, etc.. Likewise,

- any change in demand growth, caused by a decline in real wage growth, will affect productivity growth (through the Verdoorn relation), which will, in turn, influence demand growth (through its impact on profits, unit labour costs, and savings). There will be a feedback effect of the change in demand growth on productivity growth and the interaction continues until a new growth equilibrium has been reached.

Thus, demand growth and productivity growth interact and the final macro-economic effects of real wage growth restraint will depend on the nature of this interaction.

A complete classification of possible demand–productivity growth interactions and final macro-economic outcomes is given in Naastepad (2003). For this Theme Paper's argument, it will suffice to highlight the following two relevant cases:

1. *Productivity growth is both wage-cost induced and dependent on demand, and, at the same time, the Demand Regime is wage-led:* in this case, a reduction in real wage growth will lead to a decline in aggregate demand growth. Through the Verdoorn relation, this decline in demand growth will reduce the rate of growth of labour productivity. Productivity growth will be reduced even further (in cumulative fashion), because the real wage growth restraint retards the process of induced (labour-saving) technological progress.

2. *Productivity growth is strongly wage-cost induced and its dependence on demand is relatively weak, and, at the same time, the Demand Regime is profit-led:* in this case, a reduction in real wage growth will lead to an increase in aggregate demand growth. Through the Verdoorn relation, this increase in demand growth will have a positive effect on the rate of growth of labour productivity. But the real wage growth restraint at the same time retards the process of induced (labour-saving) technological progress. The negative impact of the latter outweighs the positive Verdoorn effect and, consequently, labour productivity growth will be reduced.

With these proto-typical cases in mind, we now turn to the FlexCom countries.

4.2 The Macro-Economic Impact of Real Wage Restraint in the FlexCom Countries

Table 11 summarizes the empirically estimated general equilibrium growth effects of real wage growth restraint for the FlexCom countries. Consider first the effects of real wage growth restraint for Finland, Greece, Ireland, and the Netherlands — which are all countries in which productivity growth is wage-cost induced as well as dependent on demand, and, at the same time, the Demand Regime is wage-led.

As expected for wage-led economic systems, real wage growth restraint is found to reduce real GDP growth in all four countries. But, remarkably, in absolute terms, the general equilibrium impact on GDP growth of a decline in real wage growth is very small (close to zero) in Greece, Ireland and the Netherlands — much smaller in fact than its direct, or partial equilibrium,

impact on aggregate demand growth (see Table 10). Greek, Irish and Dutch real GDP growth thus appears to be relatively insensitive to changes in real wage growth. This is unlike Finland, where a one–percentage point decline in real wage growth reduces real GDP growth by 0.5 percentage points. But also in the Finnish case, in absolute terms, the general equilibrium effect on GDP growth of a reduction in real wage growth is only about half as large as its partial equilibrium impact on demand growth.

For all four countries, GDP growth is reduced, and this leads — via the Verdoorn relation — to a decline in productivity growth. Productivity growth declines even more because the real wage restraint slows down the pace of induced technological change. In effect, in all four FlexCom countries, a reduction in real wage growth by one percentage point leads to significant declines in labour productivity growth, varying between —0.38 percentage points in Greece and —0.68 percentage points in the Netherlands. For Greece, Ireland and the Netherlands, this significant negative productivity growth effect stands in sharp contrast to the almost negligible effect of real wage growth restraint on income growth.

Table 11 also estimates the impact of real wage growth restraint on employment growth. This impact is, by definition, equal to the impact of a fall in real wage growth on GDP growth *minus* its impact on productivity growth. The positive employment growth effects of real wage restraint are particularly significant in Greece, Ireland and (most notably) the Netherlands, because of the fact that the wage restraint, in these countries, does not significantly reduce real GDP growth, but does considerably reduce labour productivity growth. As a result of real wage moderation, Greek, Irish and Dutch employment growth, in other words, will rise as a result of technological stagnation rather than growth dynamism; this tendency is found to be most pronounced for the Netherlands. In Finland, finally, the decline in employment growth, caused by the fall in GDP growth (in turn due to the real wage restraint), will be offset by the increase in employment growth caused by declining productivity growth; real wage restraint will therefore have almost no effect on Finnish employment.

The Swiss case is different from the other FlexCom countries, because its Demand Regime is profit-led (and not wage-led). But at the same time, Swiss productivity growth is found to be very strongly wage-cost induced, while its dependence on aggregate demand growth is relatively weak. This gives rise to the following general equilibrium effects of real wage growth restraint. First, the decline in real wage growth is found to have a positive (as expected), but empirically very small effect (very close to zero) on real GDP growth. Hence, Swiss GDP growth is almost insensitive to real wage growth variations. Second, Swiss productivity growth is extremely sensitive to real wage growth, because Swiss technological change responds strongly to real wage variations. As a result, a decline in real wage growth by one percentage point reduces the growth rate of Swiss labour productivity by 0.9 percentage points. (Note that the (positive) Verdoorn effect on productivity growth is extremely weak in the Swiss case, as real GDP growth increases only marginally in response to the decline in wage growth). Finally, as shown in Table 11, the Swiss economy exhibits a very strong and positive employment response to a decline in real wage growth: Swiss employment growth is estimated to increase by 0.9 percentage points due to a one–percentage point decline in real wage growth. As in the case of Greece, Ireland, and the Netherlands, this reflects technological stagnation rather than growth dynamism. Swiss employment growth increases not because of an increase in GDP growth (relative to productivity growth), but due to a decline in productivity growth (relative to real GDP growth).

4.3 Implications

What light do the above empirical findings for the five FlexCom countries shed on the hypothesis (or claim) that an economic strategy of real wage growth restraint and labour market flexibilisation[11] will lead to the simultaneous achievement of higher GDP growth, higher employment growth and a step-up in productivity growth? Answering this question is of obvious importance for the FlexCom countries and other EU countries in view of their commitment to the Lisbon strategy, which is founded on the assumption that wage restraint and labour market flexibilisation will indeed result in both increased employment growth and increased labour productivity growth. The Theme Paper's primary empirical results, derived within the context of the endogenous growth model of Naastepad (2003), point to the following.

First, the evidence for the FlexCom countries suggests that real GDP growth often (i.e. in the case of four out of five FlexCom countries) is relatively insensitive to changes in real wage growth — irrespective of (i) whether the economic system under investigation is wage-led or profit-led; and (ii) the degree of trade openness of the country in question. It must be emphasized that *in the only country, i.e Finland, in which real wage growth does have a sizeable impact on GDP growth, the impact is positive.* By implication, Finnish real GDP growth declines as a result of a reduction in real wage growth. These findings thus provide little support for the hypothesis that real wage moderation will raise GDP growth.

Second, for *all* FlexCom countries, we find a significant negative effect on labour productivity growth of a decline in real wage growth — again irrespective of whether the country is wage-led or profit-led. By retarding the process of induced technological progress, sustained real wage growth restraint lowers the long-run growth rate of labour productivity. Thus, a strategy of real wage moderation and labour market flexibilisation is indeed likely to delay investment in new technology and to lead to a low productivity growth–low real wage growth trajectory.

Third, for all FlexCom countries except Finland, the findings suggest significant employment effects of real wage growth restraint. But, importantly, this increased employment growth is due to technological stagnation rather than growth dynamism. Employment growth increases not because of an increase in real GDP growth (relative to labour productivity growth), but due to a decline in productivity growth (relative to real GDP growth).

Finally, when combined, the empirical results cast serious doubts on the effectiveness of the Lisbon strategy aimed at transforming the EU into the most dynamic and productive economy of the world by 2010. They clearly suggest that real wage growth restraint and labour market flexibilisation do not constitute a "win–win" strategy leading to higher productivity and employment growth. Rather, the results strongly point to the possibility that the real wage restraint strategy imposes a trade-off between productivity growth and employment growth: the higher the reduction in real wage growth, the larger the decline in productivity growth and (at a largely unaffected rate of real GDP growth) the higher the increase in employment growth.

5   Conclusions and Implications

European economic performance during the last two decades is generally held to have been inferior to that of the US in many respects, including GDP growth, employment growth and

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[11]Recall that by flexibilisation we mean the "liberalisation" of job protection legislation, the reduction of severance payments, the lowering of the minimum wage, the scaling-down of the social security system, and the introduction of most types of numerical flexibility, such as part-time work or the use of temporary agency workers – the principle aim of which is to reduce unit labour cost growth.

technological change. To improve its (relative) performance, Europe is urged to implement wide-ranging structural reforms, the main aim of which is to reduce real wage growth and make labour markets more "flexible". The assumption underlying this recommendation is that the restraint of real wage growth, in conjunction with labour market flexibilisation, will result in increased employment growth and higher labour productivity growth (and, therefore, also in a rise in real GDP growth). The European Commission has accepted the diagnosis and the recommendation and formulated (in Lisbon, March 2000) an ambitious strategy of structural reforms to turn the EU into the most dynamic and competitive knowledge–economy of the world by 2010. The basic assumption underlying the Lisbon strategy is that the *net* (macro-economic) effect of cutting down (real) wage growth (and improving firm profitability) is a rise in real GDP growth, in employment and in productivity growth.

This Theme Paper investigates this assumption, from a *long-run macro-economic perspective*, both theoretically and empirically, and focusing on a few small and open European countries: Finland, Greece, Ireland, the Netherlands, and Switzerland. Theoretically, following the analysis by Naastepad (2003), a strategy of real wage growth restraint and labour market flexibilisation will lead to an increase in GDP growth, productivity growth and employment growth, only under two stringent conditions: (A) The *Demand Regime* of the country under investigation is profit-led; this means that a reduction in real wage growth will (on balance) raise the growth rate of aggregate demand; and (B) its *Productivity Regime* includes only a relatively weak (positive), or no, link between real wage growth and labour productivity growth; real wage changes do not induce firms to change the pace of technological change. The primary empirical results of the Theme Paper can be summarised as follows:

1. The evidence for a clear majority of FlexCom countries suggests that condition (A) is not satisfied. In Greece, Ireland, the Netherlands, and (most clearly so) in Finland, the Demand Regime is wage-led: in each of these countries, a reduction in real wage growth will (on balance) reduce the growth rate of aggregate demand. More specifically, the evidence indicates that, in each of these economies, (i) the positive impact of a decline in real wage growth on investment (via improved profitability) is small; (ii) the positive impact of a decline in real wage growth on exports (through changes in (relative) unit labour costs) is small; and (iii) the negative impact of real wage growth restraint on private consumption demand (via income distribution and savings) is sufficiently large (in absolute terms) to offset the effects (i) and (ii) on aggregate demand. Only the Swiss Demand Regime, being profit-led in nature, meets condition (A).

2. However, the above empirical conclusion needs qualification: what is most remarkable is that, for four of the five economies studied (i.e. with exception of Finland), the elasticity of aggregate demand with respect to the real wage rate is very close to zero. This being the case, it would be best to conclude not that the aggregate Demand Regimes of Greece, Ireland, the Netherlands and Switzerland are wage-led or profit-led, but rather that the effects on aggregate demand of an economy-wide change in the real wage rate in these countries are likely to be very small. This is an important conclusion, because it implies that, in these countries, a strategy of real wage growth restraint (and labour market flexi-bilisation) will not be effective in bringing about an increase in real GDP and employment growth. It will be obvious (its Demand Regime being unmistakenly wage–led) that the same strategy, when implemented in Finland, will *reduce* GDP growth and employment growth.

3. Empirical evidence shows that, in none of the FlexCom countries, condition (B) is met.

In other words, in all five countries studied, we find that, on balance, a decline in real wage growth constitutes a significant and large drag on on labour productivity growth (by retarding the pace of induced labour-saving technological change). Thus, a strategy of real wage moderation delays investment in new technology, leading to a low productivity growth–low real wage growth trajectory. This impact on productivity growth of real wage growth restraint is found to be particularly large in the Netherlands and in Switzerland.

4. For all FlexCom countries except Finland, the findings indicate significant employment effects of real wage growth restraint. But, crucially, employment growth increases not because of an increase in real GDP growth (relative to labour productivity growth), but due to a decline in productivity growth (relative to real GDP growth).

What strikes, taking into account the fact that the FlexCom countries differ considerably in their social–economic models, openness to trade, and national growth trajectories, is not so much the differences in investment, export and savings behaviour or in the causes of productivity growth, but instead how similar the five countries are in terms of Productivity and Demand Regimes (see Table 11).

In addition to these general conclusions, the Theme paper's empirical analysis leads to a fundamental re-interpretation of the experience of the FlexCom countries with structural reforms of their labour markets.

First, the supposedly "success" countries Finland, Ireland and the Netherlands, widely acclaimed because of their superior growth performance (supposedly caused by "wide-ranging structural reforms"), have recorded above EU-average GDP growth *not as a result of, but in spite of* real wage growth restraint. According to the empirical evidence, in Finland, the decline in real wage growth between 1961–80 and 1980–2001 by 2.8 percentage points reduced the long-term growth rate of real GDP by as much as 1.4 percentage points. In Ireland and the Netherlands, large declines in real wage growth after 1980 reduced GDP growth by 0.2 and 0.3 percentage points, respectively. In none of the countries did real wage growth restraint lead to a *rise* in GDP growth. What then explains the superior GDP growth performance of these countries? The answers to this question are country-specific and unrelated to the labour market reforms. Finnish GDP growth during 1980–2001 was higher than the EU average due to: (a) above EU-average export growth, mainly of high–tech (high value–added) goods — made possible by the Finnish national strategy focused on technology, innovation and knowledge (Castells and Himanen (2002)); and (b) above EU-average consumption growth, itself the result of above EU-average real wage growth. Irish GDP growth during 1980–2001 was relatively high as a result of: (a) above EU-average investment growth, mainly FDI and FDI–induced domestic investment; and (b) an export boom, also FDI–induced as it consisted of growing exports by large international firms, producing in Ireland. Dutch GDP growth was higher than the EU average during 1980–2001, mainly due to increased consumption spending, financed out of the gains in household wealth, flowing from the stock-market and real estate booms during the 1990s (see Storm and Naastepad (2003)). In view of these findings, we cannot but conclude that there is no empirical basis for the claim by the European Commission (2003, p. 14) that there "is strong evidence that the countries that have made the strongest progress are those that have undertaken wide ranging reforms."

Second, all FlexCom countries, except Ireland, experienced a significant slowdown in their labour productivity growth between 1961–1980 and 1980–2001; productivity growth declined most in Greece (by 4.5 percentage points) and the Netherlands (by 3.3 percentage points). The empirical analysis identifies real wage restraint, which retards the process of induced labour-

saving technological progress, as the most important cause of this long-term productivity growth crisis. Real wage restraint "explains" about 47 per cent of the Greek productivity growth slowdown after 1980, about 94 per cent of the Dutch productivity growth decline, and more than 100 per cent of the Finnish and Swiss productivity growth decline.

Third, the empirical estimates help to de-mystify the origins of the so-called "Dutch employment miracle" (see Auer (2000)). If the rate of Dutch productivity growth had remained unchanged between 1961-80 and 1980–2001, the growth rate of employment (measured in hours worked) would have declined by 1.8 percentage points between these periods due to the decline in the growth rate of GDP at factor cost. Instead, the actual rate of employment growth increased by 1.5 percentage points. The difference of 3.3 percentage points between actual and hypothetical employment growth is (by definition) due to the decline in Dutch labour productivity growth, of which about 94 per cent (or 3.1 percentage points) can be attributed to the real wage growth restraint. The Dutch employment miracle is therefore the flip side of the Dutch productivity growth crisis! (see Naastepad (2003)). Likewise, it can be estimated that the decline in productivity growth, induced by the reduction in real wage growth, completely "explains" the rise in the employment intensity of GDP growth in Finland and Switzerland and is responsible for about 33 per cent of the increased employment intensity of Greek GDP growth.[12] Only Ireland is a special case: actual Irish productivity growth increased between 1961–80 and 1980–2001, notwithstanding the fact that the reduction of real wage growth (by 3.1 percentage points) must have influenced it negatively. Hence, factors other than wage costs (and outside of our present analysis) have been more important in determining Irish technological change and productivity growth — something which was already apparent from the rather unsatisfactory estimation results for the Irish Productivity Regime (see Table 5).

Finally, the Theme Paper's evidence for Finland seriously caution against too optimistic expectations concerning the positive employment effects of real wage restraint. One could argue, even acknowledging the fact that real wage growth restraint retards technological progress and productivity growth, that it in any case generates increased employment growth — which in view of the high unemployment rates in the EU, must be regarded as something desirable. However, the evidence for Finland indicates that these employment effects may not always materialise. In Finland, a one–percentage–point reduction in real wage growth is estimated to reduce productivity growth by about 0.5 percentage points. But Finland's aggregate Demand Regime is wage-led to such an extent that the same one–percentage–point reduction in real wage growth reduces Finnish demand and GDP growth by 0.5 percentage points. As a result, the impact of wage restraint on employment growth is nil. There is therefore no guarantee that a strategy of real wage growth restraint will indeed deliver the desired additional employment growth. It all depends on the nature of the Demand and Productivity Regimes of the country in question.

The Theme paper's empirical analysis for the five FlexCom countries has manifold and profound implications for macro-economic policy. When combined, the results cast serious doubts on the effectiveness of structural reforms aimed at reviving economic growth by means

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[12]For example, for Finland, assuming that the rate of productivity growth remains unchanged between 1961-80 and 1980–2001, the growth rate of employment (measured in hours worked) would have declined by 1.4 percentage points between these periods due to the decline in the growth rate of GDP at factor cost. The actual rate of Finnish employment growth, however, remained unchanged between the two periods. The difference of 1.4 percentage points between actual and hypothetical employment growth is (by definition) due to the decline in Finnish labour productivity growth, of which about 107 per cent (or 1.5 points) can be attributed to the real wage growth restraint. Similar calculations for Switzerland and Greece, using the elasticities given in Table 11, lead to the conclusions stated in the main text.

of a reduction in real wage growth and the flexibilisation of labour markets. Specifically, and contrary to widely held views, the Theme Paper finds that:

1. In four out of five FlexCom countries, real GDP growth is relatively insensitive to changes in real wage growth. This indicates that there exists no strong macro-economic trade-off between growth and equity.[13] In other words: it is not true that higher real wage growth (and an improved distribution of incomes) is necessarily "bad" for economic growth; in fact, the Paper's findings indicate that, if anything, higher real wage growth will (modestly) raise real GDP growth.

2. Real wage growth restraint has a (significant) negative impact on labour productivity growth in all FlexCom countries, mainly by retarding the rate of "wage-led" (induced) technological progress. This suggests that there exists a "complementarity" between productivity growth and equity. This complementarity is strongest in the case of Switzerland, where an increase in real wage growth by one percentage point leads to an increase in the growth rate of unit labour costs (and a corresponding decline in profitability) of only 0.1 percentage points, because labour productivity growth increases significantly. Likewise, in the Netherlands a one–percentage–point increase in real wage growth is estimated to raise unit labour cost growth (and reduce profit share growth) by only 0.3 percentage points. Profitability (and investment) is thus not very sensitive to real wage growth, because technological progress is largely "wage–led".

3. Real wage growth restraint and labour market flexibilisation do not constitute a "win–win" strategy leading to higher productivity and employment growth. Rather, the results strongly point to the possibility that the real wage restraint strategy imposes a trade-off between productivity growth and employment growth: the higher the reduction in real wage growth, the larger the decline in productivity growth — and (at a largely unaffected rate of real GDP growth) the higher the increase in employment growth. This obviously also means that it is difficult to step-up employment growth (and reduce unemployment) and raise productivity growth at the same time. Higher real wage growth may be helpful in two ways: first, by raising productivity growth, and — in a wage-led Demand Regime — by raising aggregate demand and GDP growth. But our results indicate that GDP growth is likely to increase less than productivity growth, which would lead to a fall in employment growth. Additional policies are necessary to raise GDP and employment growth (more on this below).

4. We have seen that profitability does not change proportionately with changes in real wage growth, because of induced (endogenous) changes in labour productivity. In addition, the Theme Paper's analysis shows that private investment does not respond strongly to changes in profitability. The investment response to changed profitability is strongest in the Netherlands and Switzerland, and it is extremely weak in Greece and Ireland. This implies that any strategy aimed at reviving aggregate economic activity by means of real wage moderation and improved profitability will be relatively (if not completely) ineffective. Investment growth thus has to be stimulated by other means (more on this below).

5. Export growth is remarkably insensitive to changes in relative unit labour cost, even in the FlexCom countries that are very open to international trade. This suggests a limited

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[13]Equity refers to the macro-economic distribution of income over wages and profits. The higher (lower) is the rate of real wage growth, the higher (lower) is the share of wages (profits) in income (at a constant rate of productivity growth), and the more equitable (inequitable) is the distribution of incomes.

effectiveness of strategies aimed at improving international cost competitiveness by means of real wage restraint and labour market flexibilisation. The Finnish (and to a lesser extent and in a different manner) the Irish experiences of high export growth are indicative of the (growing) importance for competitiveness of (embodied) technological progress, innovativeness and knowledge creation. All this requires a step-up (and re-direction) of public and private investment — rather than a sustained reduction in real wage growth.

The Theme Paper's theoretical and empirical analysis thus leads to two sets of policy implications — one set of "negative" and another set of more "positive" policy conclusions.

On the negative side, we must conclude that, because of all reasons given above, a strategy of real wage growth restraint (in conjunction with a more general labour market flexibilisation) will not work: it will not lead to a more dynamic, more productive knowledge-based economy and — at the same time — to increased employment growth and lower unemployment. Any economic strategy built on real wage restraint, including the one formulated by the European Union in Lisbon (March 2000), is doomed to fail: the most that can be expected is that it will lead to a rise in employment growth, but this will happen *at the cost* of a further decline in labour productivity growth and a further loss of technological dynamism. Worse still, it could lead to a decline in both GDP growth and productivity growth if the economy's Demand Regime is strongly wage-led (which is likely to be true for the EU as a whole), with little or no positive impact on employment growth. Rather than leading the EU countries onto a high–productivity–growth, high–employment–growth path, the Lisbon strategy is likely to guide these countries onto a low–wage–growth, low–productivity–growth trajectory, meanwhile further eroding the EU's technological potential, international competitive position and internal social cohesion.

On the positive side, the policy implication is that any strategy aimed at transforming the EU into a technologically dynamic and internationally competitive economy with low unemployment should include higher (rather than lower) real wage growth and less (rather than more) labour market flexibilisation. The higher real wage growth will, if anything, lead to a (small) increase in GDP growth. But more importantly, higher real wage growth will lead to a substantial increase in productivity growth — both via demand (the Verdoorn effect) and via more rapid induced (labour-saving) technological progress. In addition, the government can provide support for productivity enhancement in various ways: (i) by promoting research and development and knowledge creation (as illustrated by the Finnish experience); and (ii) by helping shape labour–management institutions that provide stronger incentives to workers to become involved in innovation and in new process and product development. Government can also "crowd in" private investment by investing more in education and R&D and by fiscal incentives promoting innovative activity, skill creation and technological change. The consequent step-up in productivity growth and in technological progress will set in motion a "virtuous circle" of: (a) improved profitability and (in some countries) higher investments; and (b) improved international competitiveness (based on superior technology) and increased (high value–added) exports. This will further raise real GDP growth. If successful, employment will grow more rapidly (and unemployment will decline). This, in outline, is a high–wage, high–productivity growth strategy, which (it will be clear) deviates, in important respects, from the real wage restraint and labour market flexibilisation policies proposed by the Lisbon strategy. It may provide the EU countries with an effective escape from the productivity growth—employment growth trade-off, into which the Lisbon strategy will inevitably run.

6 References

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7 Appendix: Data Sources and Definitions

The following data sources were used to build the data base of the empirical growth model:

- *European Commission (2001a):* For Finland, Greece, Ireland and the Netherlands: private consumption (growth rates); exports of goods and services at 1995 prices; export/GDP and import/GDP; unemployment rates (percentage of labour force). For the EU: private consumption (growth rates); employment growth (persons employed); real wages (growth rate); gross fixed investment (growth rate); exports (growth rates); export/GDP and import/GDP; unemployment rate (percentage of labour force).

- *European Commission (2001b):* For Finland, Greece, Ireland and the Netherlands: the share of part-time employment in total employment; the share of fixed-term employment in total employment. For Switzerland: these data are from Boucher and Wickham (2003).

- OECD National Accounts Statistics: for all FlexCom countries: employment growth (in terms of persons employed); exchange rates (national currency per US dollar); gross fixed capital formation (at constant 1995 prices); Gross Domestic Product (GDP) at constant 1995 market prices; GDP at constant 1995 factor costs; gross profit share (non-wage income/GDP at factor cost); real compensation of employees; gross private savings. For Switzerland: exports of goods and services at 1995 prices; export/GDP and import/GDP.

- *Groningen Growth and Development Centre:* for all FlexCom countries: total number of hours worked. *Van Ark (2000):* EU labour productivity growth (per hour worked) during 1961–1998. *The Conference Board (2002):* EU labour productivity growth (per hour worked) during 1990–2002; growth rate of total hours worked in the EU during 1990–2002.

The following definitions are used in the analysis:

- labour productivity (per hour worked) = Gross Domestic Product (at constant 1995 factor cost) / total number of hours worked.

- real wage (per hour worked) = real compensation of employees (including all social security payments) / total number of hours worked.

- gross profit share = (GDP at factor cost — compensation of employees)/ GDP at factor cost.

- growth rate of relative unit labour cost (RULC) of country X = (growth rate of real wages in country X — average growth rate of real wages in the sample of 18 OECD countries) — (growth rate of labour productivity in country X — average growth rate of labour productivity in the sample of 18 OECD countries) — (average annual rate of currency depreciation in country X — average annual rate of currency depreciation in the sample of 18 OECD countries).

Table 1: **Long-Run Economic Performance I: FlexCom Countries**

(average annual growth rates)

	GDP	Labour Productivity	Employment (Persons)	Employment (Hours Worked)	Hours Worked Per Person	Real Wages
Finland						
1961–1980	4.2	4.5	0.4	—0.3	—0.7	5.5
1980–2001	2.6	3.1	0.1	—0.3	—0.4	2.7
1961–2001	3.4	3.7	0.3	—0.3	—0.6	3.9
Greece						
1961–1980	6.2	5.4	0.9	+0.3	—0.6	6.8
1980–2001	1.6	0.9	0.7	+0.7	—0.0	1.4
1961–2001	3.9	3.2	0.8	+0.4	—0.4	4.1
Ireland						
1961–1980	4.5	5.5	0.0	—0.8	—0.8	6.6
1980–2001	5.4	5.8	1.9	+0.9	—1.0	3.5
1961–2001	5.0	5.7	1.0	+0.2	—0.8	4.7
The Netherlands						
1961–1980	4.0	4.0	1.4	+0.2	—1.2	5.0
1980–2001	2.5	0.7	2.2	+1.7	—0.5	0.4
1961–2001	3.3	2.4	1.8	+0.9	—0.9	2.7
Switzerland						
1961–1980	3.0	2.8	0.8	+0.2	—0.6	3.7
1980–2001	1.6	1.2	1.1	+0.3	—0.8	1.6
1961–2001	2.2	2.0	0.9	+0.3	—0.6	2.6
EU–14						
1961–1980	3.9	4.4	0.3	—0.4	—0.7	4.4
1980–2001	2.2	2.2	0.8	+0.1	—0.8	1.8
1961–2001	3.1	3.2	0.6	—0.2	—0.7	3.1

Notes: (i) GDP is Gross Domestic Product at constant 1995 market prices; (ii) labour productivity is GDP (constant prices) per hour worked; (iii) real wage is compensation of employees per hour worked.

Data sources: see Appendix.

Source: Naastepad and Storm (2003).

Table 2: **Long-Run Economic Performance II: FlexCom Countries**

(average annual growth rates)

	Private Consumption	Gross Fixed Capital Formation	Exports	Relative Unit Labour Costs
Finland				
1961–1980	4.1	3.4	6.8	+0.1
1980–2001	2.5	1.8	5.7	—3.6
1961–2001	3.3	2.4	6.3	—2.0
Greece				
1961–1980	6.2	6.8	11.7	—0.3
1980–2001	2.2	1.0	4.4	—11.4
1961–2001	4.2	4.2	7.7	—5.9
Ireland				
1961–1980	5.2	8.1	8.5	—0.6
1980–2001	2.2	4.2	11.0	—5.9
1961–2001	3.7	6.3	9.9	—3.6
The Netherlands				
1961–1980	4.8	3.6	7.0	+4.1
1980–2001	2.2	2.4	4.8	—2.0
1961–2001	3.5	3.0	5.9	+0.9
Switzerland				
1961–1980		3.4	4.4	+5.3
1980–2001		2.2	3.1	—0.3
1961–2001		2.6	3.8	+2.4
EU–14				
1961–1980	4.1	3.9	6.8 (7.3)	
1980–2001	2.2	2.5	5.4 (5.1)	
1961–2001	3.2	3.2	6.2 (6.2)	

Note: The relative real unit labour costs are calculated for a sample of 18 OECD countries. The figures in parentheses are growth rates of the total exports of 18 major OECD countries.

Data sources: see Appendix.

Source: Naastepad and Storm (2003).

Table 3: **Long-Run Economic Performance III: FlexCom Countries**

(average percentage shares)

	Exports/ GDP	Imports/ GDP	(Exports+Imports)/ GDP	Profit Share	Unemployment Rate
Finland					
1961–1970	20.6	21.5	42.1	45.2	1.8
1971–1980	26.6	27.5	54.1	39.4	4.1
1981–1990	27.6	27.2	54.8	38.2	9.2
1991–2000	34.8	28.7	63.5	42.1	11.3
Greece					
1961–1970	10.5	16.9	27.4	72.2	5.0
1971–1980	16.8	21.9	38.7	68.7	2.2
1981–1990	21.8	27.1	48.9	63.4	6.4
1991–2000	19.0	27.0	46.0	63.4	9.5
Ireland					
1961–1970	14.3	13.9	28.2	45.1	4.8
1971–1980	20.5	21.1	41.6	40.8	6.1
1981–1990	20.9	21.1	42.0	42.0	8.7
1991–2000	24.3	21.7	46.0	49.7	10.7
The Netherlands					
1961–1970	45.2	46.7	91.9	42.3	0.9
1971–1980	51.2	50.2	101.4	35.8	4.4
1981–1990	59.9	56.4	116.3	41.3	8.5
1991–2000	59.0	53.6	112.6	42.8	5.4
Switzerland					
1961–1970				45.2	neg.
1971–1980	25.8	19.9	45.7	40.1	0.1
1981–1990	31.4	26.2	57.6	35.9	0.4
1991–2000	36.9	32.4	69.3	34.0	2.5
EU–15					
1961–1970	19.4	19.4	38.8		2.2
1971–1980	25.3	25.3	50.6		4.0
1981–1990	28.7	28.1	56.7		9.0
1991–2000	29.9	28.7	68.6		9.9

Notes: (i) The (gross) profit share is defined as: (GDP at factor cost — compensation of employees)/GDP at factor cost; (ii) Unemployment rates are according to the Eurostat definition (percentage of civilian labour force).

Data sources: see Appendix.

Source: Naastepad and Storm (2003).

Table 4: **Part-time and Fixed-term Employment as a Percentage of Total Employment: FlexCom Countries**

Country	Year	Part-time employment	Fixed-term employment	Total atypical employment
Finland	1991	10.1	15.9	26.0
	2000	12.3	14.4	26.7
Greece	1991	3.9	6.8	10.7
	2000	4.3	7.0	11.3
Ireland	1991	8.3	6.6	14.9
	2000	16.4	3.8	20.2
The Netherlands	1991	33.1	7.0	40.1
	2000	41.1	11.9	53.0
Switzerland	1990	22.1	9.1	31.2
	2001	24.8	5.6	30.4
EU	1991	13.9	9.2	23.1
	2000	17.7	11.4	29.1

Note: Definitions of part-time and fixed-term employment are from Eurostat Quarterly Labour Force Survey.

Source: European Commission (2001), *Employment in Europe 2001. Recent Trends and Prospects*, Bruxelles: Directorate Employment and Social Affairs; data for Switzerland are from Boucher and Wickham (2003), Tables 30 and 31.

Table 5: **Determinants of Labour Productivity Growth (1961-2000)**

No.	Country	Growth of Aggregate Demand (volume)	Growth of Real Wages (per Hour Worked)	R^2	DW
1	Finland	0.49***	0.29***	0.46	1.76
2	Greece	0.58***	0.32***	0.75	2.08
3	Ireland	0.51*	0.43*	0.07	1.97
4	The Netherlands	0.50**	0.65***	0.62	2.07
5	Switzerland	0.20***	0.92***	0.93	1.97

Notes: The reported coefficients are elasticities. An asterisk (*) indicates statistical significance at the 10–percent level; (**) indicates statistical significance at the 5–percent level; (***) indicates statistical significance at the 1–percent level. *D.W.* = Durbin-Watson statistic (the D.W. statistic is adjusted in case of AR(1) estimation). The method of estimation was OLS for Ireland, and AR(1) for Finland, Greece, The Netherlands, and Switzerland.

Data sources: see Appendix.

Source: Naastepad and Storm (2003).

Table 6: **Determinants of Investment Growth (1961-2000)**

No.	Country	Growth of Aggregate Demand (volume)	Profit Share Growth	R^2	DW
1	Finland	1.67***	+0.18**	0.98	2.08
2	Greece	1.00***	+0.46	0.76	1.95
3	Ireland	1.60**	−0.17	0.83	2.06
4	The Netherlands	1.00***	+0.43**	0.92	1.83
5	Switzerland	1.00***	+0.34*	0.83	2.15

Notes: The reported coefficients are elasticities. An asterisk (*) indicates statistical significance at the 10–percent level; (**) indicates statistical significance at the 5–percent level; (***) indicates statistical significance at the 1–percent level. *D.W.* = Durbin-Watson statistic. The method of estimation was OLS for Finland, Greece, Ireland, the Netherlands, and Switzerland. The one-period lagged investment-GDP ratio was included in all regressions; two-period lagged investment-GDP was included in the regressions for Finland and Switzerland. A time variable was included in the equations for Finland, Ireland, the Netherlands, and Switzerland.

Data sources: see Appendix.

Source: Naastepad and Storm (2003).

Table 7: **Determinants of Export Volume Growth (1961-2000)**

No.	Country	Growth of World Trade (volume)	Growth of Relative Unit Labour Costs (RULC)	R^2	DW
1	Finland	0.94***	−0.27***	0.71	1.64
2	Greece	1.26***	+0.01	0.47	1.76
3	Ireland	0.73***	−0.05	0.82	2.19
4	The Netherlands	0.95***	−0.00	0.86	1.90
5	Switzerland	0.66***	−0.04**	0.89	1.95

Notes: The reported coefficients are elasticities. An asterisk (*) indicates statistical significance at the 10–percent level; (**) indicates statistical significance at the 5–percent level; (***) indicates statistical significance at the 1–percent level. *D.W.* = Durbin-Watson statistic. The method of estimation was OLS for Finland, Greece, and Ireland, and AR(1) for the Netherlands and Switzerland.

Data sources: see Appendix.

Source: Naastepad and Storm (2003).

Table 8: **Elasticity of Export Market Share with respect to RULC by Country**

Country	$RULC$ long-run	$RULC$ long-run: mean by by country from individual industry regressions
France	+0.172	+0.340
Germany	−0.124	−0.238
Italy	−0.033	+0.032
Japan	−0.400*	−0.356
UK	−0.246*	−0.227
USA	−0.287*	−0.361
Belgium	+0.041	−0.027
Denmark	+0.224	+0.051
Finland	−0.356	−0.167
Netherlands	+0.164	−0.122
Norway	−0.907*	−0.826
Sweden	−0.670*	−0.628

Notes: An asterisk (*) indicates statistical significance. The coefficients in column (1) are from country-specific regressions. Column (2) reports the mean for each country from the individual industry-country regressions. The data run from 1970 to 1992. The 12 main manufacturing industries included in the analysis are: food, drink and tobacco; textiles and clothing; wood and furniture; paper and printing; chemicals; non-metallic minerals; basic metals; metal products; non-electrical machinery; electrical machinery; transport equipment; and instruments.

Source: Carlin, Glyn and Van Reenen (2001).

Table 9: **Saving Propensities out of Wage and Profit Income (1960-2000)**

No.	Country	σ_w	$\sigma_\pi - \sigma_w$	σ_π	R^2	DW
1	Finland	−0.10	0.70***	0.60***	0.48	2.00
2	Greece	+0.04	0.30***	0.30***	0.42	1.83
3	Ireland	+0.13**	0.11*	0.24***	0.95	2.03
4	The Netherlands	+0.08*	0.40***	0.48***	0.76	1.92
5	Switzerland	+0.14**	0.17*	0.31***	0.93	1.80

Notes: An asterisk (*) indicates statistical significance at the 10–percent level; (**) indicates statistical significance at the 5–percent level; (***) indicates statistical significance at the 1–percent level. *D.W.* = Durbin-Watson statistic. The method of estimation was AR(1) for all FlexCom countries.

Data sources: see Appendix.

Source: Naastepad and Storm (2003).

Table 10: **The Nature of the Demand regime (1960-2000): The FlexCom Countries**

No.	Country	Wage-led	Profit-led
1	Finland	1.08	
2	Greece	0.15	
3	Ireland	0.12	
4	The Netherlands	0.18	
5	Switzerland		—0.04

Notes: The figures reported in this Table are all elasticities of aggregate demand with respect to the real wage rate. The Demand Regime is said to be wage-led, if a rise in real wage growth — on balance — leads to a rise in demand and output growth. The Demand Regime is profit-led, if a rise in real wage growth leads to a decline in aggregate demand and output growth. See Bhaduri and Marglin (1990) and Taylor (1990). For the derivation of the elasticity of aggregate demand with respect to the real wage rate, see Naastepad (2003).

Source: Naastepad and Storm (2003).

Table 11: **The Macro-Economic Impact of a (One-Percentage) Point Decline in Real Wage Growth on the Rate of GDP Growth, Productivity Growth and Employment Growth: The FlexCom Countries**

No.	Country	GDP Growth	Labour Productivity Growth	Employment Growth
1	Finland	—0.50	—0.53	+0.03
2	Greece	—0.10	—0.38	+0.28
3	Ireland	—0.07	—0.47	+0.40
4	The Netherlands	—0.06	—0.68	+0.62
5	Switzerland	+0.00	—0.92	+0.93

Notes: The figures reported in this Table are (reduced-form) elasticities of (i) real GDP, (ii) labour productivity (value added per hour worked), and (iii) employment (measured in hours) with respect to the real wage rate. For the formal derivation of these elasticities, see Naastepad (2003).

Source: Naastepad and Storm (2003).