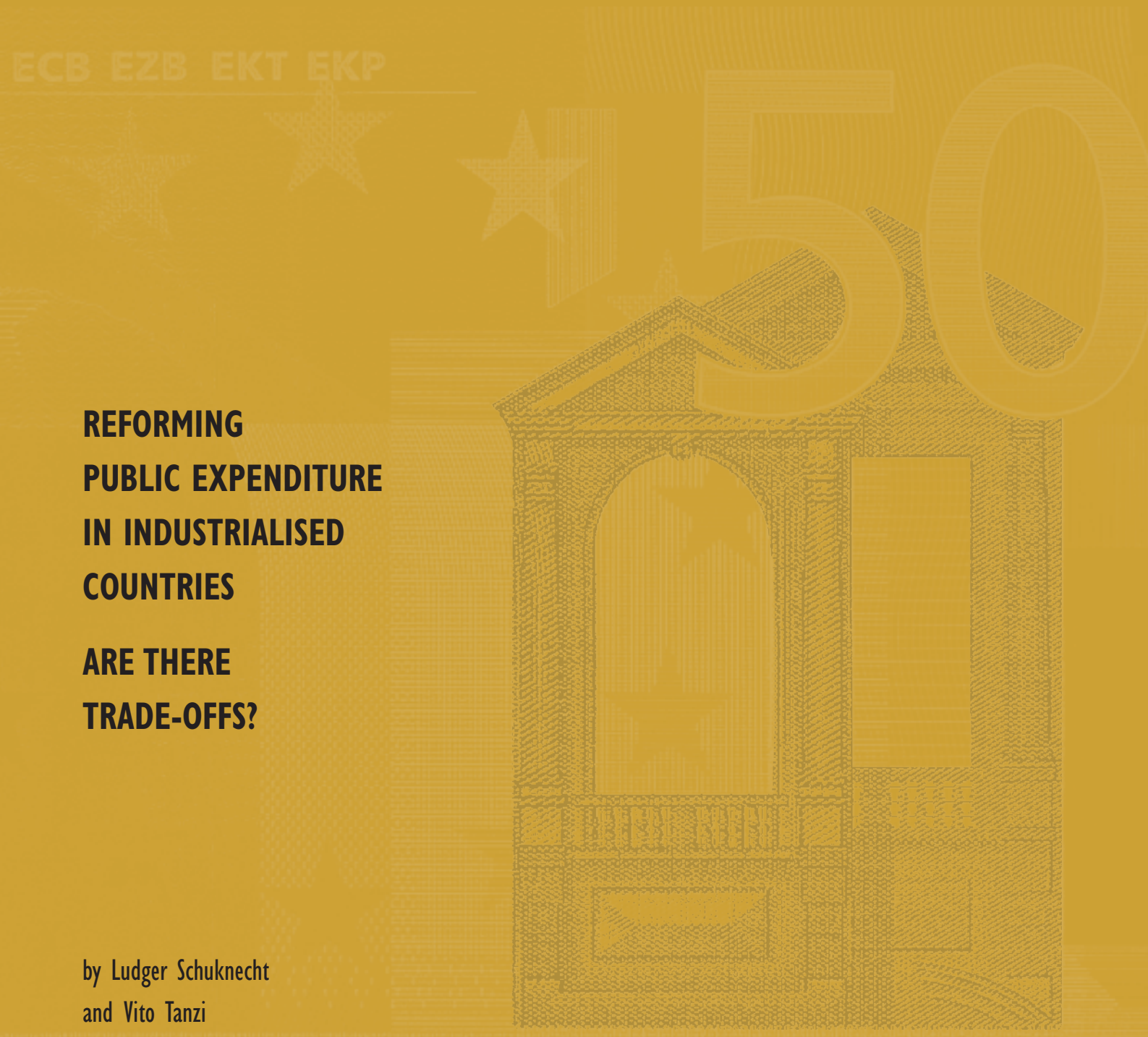
EUROPEAN CENTRAL BANK

WORKING PAPER SERIES
NO. 435 / FEBRUARY 2005



REFORMING PUBLIC EXPENDITURE IN INDUSTRIALISED COUNTRIES

ARE THERE TRADE-OFFS?

by Ludger Schuknecht
and Vito Tanzi

EUROPEAN CENTRAL BANK

WORKING PAPER SERIES
NO. 435 / FEBRUARY 2005

REFORMING PUBLIC EXPENDITURE IN INDUSTRIALISED COUNTRIES

ARE THERE TRADE-OFFS? [1]

by Ludger Schuknecht [2]
and Vito Tanzi [3]

In 2005 all ECB publications will feature a motif taken from the €50 banknote.

This paper can be downloaded without charge from http://www.ecb.int or from the Social Science Research Network electronic library at http://ssrn.com/abstract_id=647947.

1 The authors are grateful for comments from Lars Jonung, Peter Wiertz, members of the ECB's Fiscal Policy Division and participants of the workshop on "Fiscal Policy in EMU: New Issues and Challenges" organised by the European Commission's Directorate General for Economic and Financial Affairs, Brussels, 12 November 2004. The authors are also grateful to Anna Foden and Gerhard Schwab for invaluable assistance. The views expressed in the paper are the authors' and do not necessarily reflect those of their respective institutions.

2 European Central Bank, Kaiserstrasse 29, D-60311 Frankfurt am Main, Germany; e-mail: ludger.schuknecht@ecb.int
3 Inter-American Development Bank, 1300 New York Avenue, NW Washington, DC 20577, USA.

Address
Kaiserstrasse 29
60311 Frankfurt am Main, Germany

Postal address
Postfach 16 03 19
60066 Frankfurt am Main, Germany

Telephone
+49 69 1344 0

Internet
http://www.ecb.int

Fax
+49 69 1344 6000

Telex
411 144 ecb d

ISSN 1561-0810 (print)
ISSN 1725-2806 (online)

CONTENTS

Abstract

In this paper, we show that, contrary to common beliefs, over the past two decades several countries were able to reduce public spending by remarkable amounts. These countries did not seem to have suffered from these large reductions either in a macroeconomic sense, or in terms of lower values for socio-economic indicators. On the contrary, ambitious expenditure reform coincides with improvements in fiscal, economic, human development and institutional indicators. Positive developments associated with expenditure reform, in some instances, have taken a while to materialize and early and persistent reformers have, hence, already seen more of them. Unfavourable effects on income distribution within countries are small and they are mitigated in absolute terms by faster growth in the medium run and by the possibilities of better targeting of public spending. Moreover, there is significant divergence across countries that suggests that country circumstances and reform design matter.

Keywords: public expenditure, expenditure reform, economic growth, socio economic indicators

JEL classification: H5, H6, O57

Non-technical summary

The period up to the early 1980s witnessed a remarkable growth in public spending in most industrialized countries, and particularly on their "welfare states". Since the late 1960s skepticism as to the benefits from an ever-increasing role of the state started to be expressed and theoretical and empirical evidence started to accumulate that suggested that a much smaller level of public spending would be able to promote basic social objectives.

In this paper, we show that over the past two decades several countries were able to reduce public spending by remarkable amounts. Average public spending that had peaked at almost 52% of GDP over the past 20 years, in a sample of 22 industrialized countries, fell by almost 7% of GDP and is now slightly below the 1982 ratio. However, this average masks large differences across countries: 5 countries reduced primary spending (i.e. total spending excluding interest) by 8 or more percent of GDP. Three countries did not experience expenditure reducing reforms and reported their peaks in primary spending for 2002, at the end of the sample period.

Reforms took place in two main waves in mostly difficult economic times: the early to mid-1980s and the early to mid-1990s. There is no evidence that expenditure reductions strongly hurt spending on public education and investment, the supposedly most productive categories. Most reductions concerned transfers and subsidies and interest spending.

The study finds that countries undertaking ambitious expenditure reform did not seem to have suffered from these large reductions either in a macroeconomic sense, or in terms of lower values for socio-economic indicators. On the contrary, ambitious expenditure reform was generally accompanied by improvements in fiscal indicators. They made possible significant deficit and debt reductions while providing some room for tax cuts.

While expenditure reform in most instances was not accompanied by significant short-run output losses, it was accompanied by a significant recovery in trend growth and employment, especially in countries that undertook ambitious reforms. Moreover, expenditure reform was correlated with improvements in indicators of institutional quality and did not coincide with less favourable developments of human development indicators.

In some instances, positive developments associated with expenditure reform took a while to materialize. But early and persistent reformers have already benefited most from them.

Unfavourable effects from expenditure reform on income distribution were small and were mitigated, in absolute terms, by faster growth and by better targeting of public spending. However, there is significant divergence across countries that suggests that country circumstances and reform design matter.

I. Introduction

In an earlier study, the authors of this paper traced the growth of public spending in industrialized countries for the period between 1870 and the middle of the 1990s. They showed that public spending as a share of gross domestic product (GDP) grew at a fast pace especially in the period since World War One. The pace of growth in the majority of countries was particularly pronounced in the period after 1960 when many established what came to be called a welfare state. That study also attempted to assess the productivity of that growth in spending by looking at its impact on a variety of socio-economic indicators. It did this by dividing the sample of countries into three groups, depending on the level reached in the most recent years by the ratio of public spending to GDP. These three groups were labeled small, medium and large government countries.

The matching of each of these groups with the values of many of the socio-economic indicators failed to support the conclusion that larger levels of public spending produced better indicators. On the contrary, for a majority of these indicators, lower public spending seemed to be associated with better or more desirable results. The authors speculated that a level of public spending somewhere between 30 and 35 percent of GDP was likely to provide the government of a country with resources sufficient to support all the activities that genuinely merit public support. They concluded that in future years the policymakers of the industrialized countries would come to share this conclusion and would initiate programmes that, over a period of time (perhaps a generation), would bring public spending down to that range in spite of pressures that would come from fiscally unfriendly demographic changes.[1]

When the welfare states were created, pushing the level of public spending to high percentages of GDP, the industrialized countries were part of a world economy that was

[1] This section draws from Tanzi (2004)

not well integrated and had markets that suffered from many inefficiencies. In that period (largely the 1950s and first half of the 1960s) economists developed economic concepts – public goods, externalities, cost-benefit analysis, merit goods – that gave governments justifications for intervention. The view that markets were inefficient and needed to be significantly supplemented by public intervention became popular and gave politicians the incentive and the excuse to expand the role of the state. At that time public choice had not yet developed as a serious field of study. In some countries the expansion of the public sector was considerable. In others it was more limited. But all countries saw public spending go up as a share of GDP. In a number of countries this share exceeded 50 per cent, especially when the programmes created universal entitlements for the countries' citizens.

Now, half a century later, the situation has changed. First of all markets have become more sophisticated than they were in the 1950s. Second, countries are much less autarkic than they used to be. Therefore goods and services that cannot be provided efficiently by the domestic market can be bought from other countries more easily than in the past. . Policymakers have become more sensitized to the fact that high levels of public spending create inefficiencies on the tax side – because they require higher tax rates – and on the expenditure side – because they require large bureaucracies, and because, from the individual citizen's point of view, government services often have a zero (or at least a very low) price thus stimulating greater demand for them. Finally, high public spending may lead to macroeconomic difficulties when it is partly financed by fiscal deficits.

It is now generally accepted that the state must correct shortcomings of the market and not replace the market. Therefore, a more developed market should require less government spending. It has also become more obvious that when the government enters a market by establishing, de facto, a government monopoly in a particular activity, it

prevents or makes it more difficult for the market to develop fully in that activity. This has happened in many countries in areas such as pensions, education, health, infrastructures, energy, transportation and some other services. In many of these areas, experiments in various countries have indicated that, given the opportunity (and with some efficient regulatory guidance by the public sector) the private market can provide the necessary services more efficiently than the government. When this happens, the government has the option of providing targeted assistance to those who may be too poor to buy from the private sector services such as health and education. Available evidence indicates that countries that have lower levels of public expenditure as shares of GDP do a better job at targeting public transfers toward those at the bottom of the income distribution.[2]

In conclusion, governments can be much leaner and yet equally effective in attaining their basic objectives if they focus on providing a functioning administration that protects property rights and the rules of law, and on supporting the provision of essential public goods (including infrastructure and basic schooling) and basic social safety nets. And there are forces at work—domestic and global economic and political developments and pressures, for greater knowledge and transparency—that will help set this process into motion.

In the rest of this paper we will show that the trend that we had predicted, toward lower levels of public spending, may actually be happening. We shall show that over the past two decades several countries were able to reduce public spending from its highest level by remarkable amounts. Furthermore, these countries did not seem to have suffered from these large reductions either in a macroeconomic sense, or in terms of lower values for socio-economic indicators.

[2] See OECD, Income Distribution in OECD Countries (Paris: 1995).

It is necessary to stress that this is a broad-brush paper that attempts to identify trends that have been largely missed by economists. Obviously much more work would be necessary to give full backing to its conclusions. We hope that such work will follow.

II. Developments in Public Expenditure in the Past Two Decades

In this section we shall consider developments in the share of public spending into GDP for 22 industrialized countries over the past two decades. We shall argue that these developments contain lessons that have not been extracted so far. They are, broadly, in the direction predicted in a book published a few years ago. See Tanzi and Schuknecht (2000). However, within the sample considered, there are still great differences in trends among groups of countries.

We shall start our story in 1982. In that year total public spending, as a share of GDP, averaged 46.5 percent for the whole sample of 22 countries, and 47.2 percent for the countries of the euro zone. The level had grown significantly since 1960 in practically all industrialized countries. There were, however, great differences around this average, with Japan and Switzerland spending less than 33 percent of GDP while Belgium and Sweden spent more than 60 percent of GDP. Other countries spending less than 40 percent of GDP were Australia, Greece, Spain and the United States. Other countries spending more than 55 percent of GDP comprised Denmark, the Netherlands and New Zealand. See Table 1.

Total expenditure: 1982, year of maximum spending ratio, 2002
Percent of GDP

	1982 or nearest	Maximum public expenditure ratio		2002 or nearest	Change Maximum-2002
	(1)	(2)		(3)	(5)
Australia	38.1	40.2	(1985)	35.6	-4.6
Austria	49.0	57.3	(1995)	51.3	-5.9
Belgium	60.8	61.0	(1983)	50.5	-10.5
Canada	46.5	52.8	(1992)	41.4	-11.4
Denmark	57.8	60.7	(1994)	55.8	-4.9
Finland	41.3	60.4	(1993)	50.1	-10.3
France	49.8	55.5	(1996)	53.6	-1.9
Germany	48.1	50.3	(1996)	48.5	-1.8
Greece	35.4	51.0	(1995)	46.8	-4.2
Ireland	49.8	49.8	(1982)	33.5	-16.4
Italy	48.3	57.1	(1993)	48.0	-9.1
Japan	32.9	40.0	(1998)	39.8	-0.2
Luxembourg	49.5	49.5	(1982)	44.3	-5.2
Netherlands	58.6	58.7	(1983)	47.5	-11.2
New Zealand	56.5	56.5	(1985)	41.6	-14.9
Norway	45.6	54.1	(1994)	47.5	-6.6
Portugal	40.0	46.3	(2001)	46.0	-0.3
Spain	35.9	47.6	(1993)	39.9	-7.7
Sweden	64.3	68.0	(1993)	58.3	-9.7
Switzerland	32.8	35.7	(1998)	34.3	-1.4
United Kingdom	44.8	45.4	(1984)	41.1	-4.3
United States	36.2	37.2	(1992)	34.1	-3.1
Average	46.5	51.6		45.0	-6.6
Euro zone	47.2	53.7		46.7	-7.0
Ambitous reformers, early	56.4	56.5		43.3	-13.2
Ambitious reformers, late	47.1	56.7		48.1	-8.6
Timid reformers, early	44.1	45.0		40.3	-4.7
Timid reformers, late	45.5	49.4		45.7	-3.7
Non reformers	36.1	45.8		44.2	-1.6
Standard deviation	9.2	8.4		7.1	

Source: EU Commission, AMECO

If we consider the latest years for which data are available – 2002 - or the closest year to 2002 – we notice that the average level of public spending fell marginally, from 46.5 percent of GDP in 1982 to 45.0 percent of GDP in 2002, for all the countries, and from 47.2 percent of GDP to 46.7 percent of GDP, for the countries of the euro area. This

small reduction gives the impression that little happened over the two decades. This, however, is a wrong impression because, as we shall show, major changes occurred within these two decades. We shall highlight some of the important changes.

The first change worth highlighting is the significant reduction in the dispersion of the public expenditure ratios around the average. The countries are becoming more similar in this aspect. All the countries that had high levels of public spending in 1982 reduced their spending over the next 20 years. Belgium, Ireland, the Netherlands, New Zealand and Sweden reduced public spending by substantial amounts. These had been the leaders in public spending in 1982. Over the same period, several of the previously low spenders, such as Greece, Japan, Portugal and Spain, increased their spending levels. Between 1982 and 2002, the standard deviation of the ratios of public spending to GDP for the 22 industrialized countries fell from 9.2 to 7.1.

The second and more important change is not obvious when the 2002 data are compared with the 1982 data. The trend in the behaviour of public spending over these two decades has not been the same as it had been in the preceding two decades that ended in 1982. During that earlier period public spending as a share of GDP had increased continually and consistently in practically all the countries in the sample. For many of these countries the year when the highest level of public spending, as a share of GDP, was reached some time between 1982 and 2002. In other words, for many countries, public spending kept rising after 1982 and reached a peak after 1982 but before 2002. This peak was in most countries reached by 1996. By this later year public spending had started falling in most countries, reversing the trend of previous decades.

To identify the breaks in the past trends, it is necessary to identify the specific years when public spending reached a maximum for each country. We can then compare these maxima with the values reached in 2002 to verify whether a change in trend has actually

occurred. Column (2) in Table 1 shows the highest ratios reached by public spending in the countries in the sample. It also shows the year when those maxima were reached. It is evident that, in the 1982-2002 period, public spending followed an inverted U-shaped curve. In the majority of countries, it first rose and then fell. However, the year in which the maximum was reached varied from country to country.

Comparing these maxima with the 2002 data, a change in the behaviour of public spending is evident. For many countries, the 2002 figures were considerably lower than the maximum levels reached in previous years. For the whole group of countries, the 2002 average level of public spending was a remarkable 6.6 percent of GDP lower than the maximum reached in earlier years. It is necessary to repeat that the maximum level was not reached in all countries at the same time. For the euro zone the average fall in public spending was even larger, about 7 percent of GDP. In these countries public spending that, for the years when a maximum had been achieved, had averaged 53.7 percent of GDP, fell to 46.7 percent of GDP. This sharp fall suggests that a significant change in the trend of public spending in industrialized countries may have started. Obviously only time will tell whether this is a permanent trend.

In our discussion we shall ignore the initial year, 1982, and focus instead on the changes that have occurred since peak levels were reached. Six countries reduced public spending (G) by more than 10 percent of GDP. Classifying them in the order of the size of the reduction, the countries are the following ones:

Country	Change in (G)/GDP	Year Peak Level Reached
Ireland	-16.4	1982
New Zealand	-14.9	1985
Canada	-11.4	1992
Netherlands	-11.2	1983
Belgium	-10.5	1983
Finland	-10.3	1993

The remarkable achievement of these countries is not only the size of the reduction from the peak levels but the fact that their 2002 public spending levels were in all cases below, and in some cases well below, the 1982 levels. In some of these countries the role of the state, as measured by the share of public spending into GDP, was changing in a major way moving toward the level predicted by Tanzi and Schuknecht (2000).

Six other countries cut their public spending by between 5 and 10 percent of GDP from the peak level. In their order of reduction they were:

Country	Change in (G)/GDP	Year Peak Level Reached
Sweden	-9.7	1993
Italy	-9.1	1993
Spain	-7.7	1993
Norway	-6.6	1994
Austria	-5.9	1995
Luxembourg	-5.2	1982

While the achievements of this group could also be considered significant, it was less so than in the previous group and not only because of the size of the reduction. With the exception of Sweden and Luxembourg, which not only reduced the spending from the peak level but also from the 1982 level, the other countries had, in 2002, expenditure levels that were either equal to or higher than in 1982. Sweden's 2002 spending level was 6.0 percent of GDP lower than its 1982 level, while Luxembourg's 2001 spending level was 5.2 percent of GDP lower than 1982. On the other hand Spain's level was 4.1 percent higher than in 1982 while in Italy it was approximately the same. In Italy the combination of a high public debt with a high rate of inflation had pushed the expenditure level sharply upward in 1993. Thus the fall in inflation, after Italy joined EMU, significantly reduced its nominal interest payments and thus the level of public spending. However, primary spending was affected much less.

Categorisation of countries by reform effort and timing

We define expenditure reductions (and more specifically primary expenditure reductions) that follow the year of maximum spending as expenditure reform.[3] As to the timing of reforms, it is possible to distinguish two groups of countries. The first group is constituted by countries that reached the maximum spending level by the early to mid-1980s so that they started the process of expenditure reduction at that time. This group includes Ireland, New Zealand, the Netherlands, Belgium and Luxembourg, and we could add Australia and United Kingdom. We shall refer to this group as "early reformers". The second group includes countries that reached the maximum expenditure level in the early to mid-1990s and that succeeded, by 2002, in reducing the share of public spending into GDP. This group includes Canada, Finland and Sweden. In addition, Austria, Norway, Spain, Denmark, France, Germany, Italy, Switerland and the United States also experienced their maximum spending ratio in that period. We shall refer to them as "late reformers".

Among the early and late reformers another distinction reflecting the intensity of the reform efforts might be useful. A number of countries sharply reduced the level of public spending. Others reduced that level by much less. A dividing line of five percent of GDP reduction could be used for classifying the countries. Those which exceeded five percent of GDP reduction could be called ambitious reformers while the others could be called timid reformers. However, this distinction suffers from two shortcomings. First, it may be more difficult for a country that starts with a low expenditure level to cut five percent of GDP from public spending than for a country that starts with a high level. This

[3] If we were interested primarily in short term discretionary reform efforts, it would be appropriate to look at cyclically adjusted expenditure ratios. However, when looking at medium to long term trends (as is intended here) this distinction is less relevant. Moreover, such data is of rather low quality and is subject to considerable measurement problems and errors.

is the case for Australia, Switzerland and the United States. These countries did not have high levels of public spending so there was less to reduce. Second, a country that starts with a high ratio of public debt to GDP and with a high rate of inflation may be able to reduce public spending significantly simply if its inflation rate falls thus pushing down nominal interest rates and interest payments. This was surely the case for Italy and Greece and to a lesser extent for some other countries.

Keeping in mind the two caveats mentioned above and choosing a reduction in *primary* spending by 5 percent as the threshold between timid and ambitious reforms, early and ambitious reformers could include Belgium, Ireland, the Netherlands and New Zealand (see the categorization table below). These four countries reduced their public spending by a remarkable 13.2 percent of GDP from the peak level to the 2002 level. Late and ambitious reformers could include Austria, Canada, Finland, Norway, Spain and Sweden. These six countries reduced their average public spending from a maximum of 56.7 percent of GDP to 48.0 of GDP in 2002, or by 8.7 percent of GDP. Especially large were the reductions in Canada, Finland and Sweden, which averaged 10.5 percent of GDP. All these ambitious reformers provide support to the view that there is life after public spending reductions. These countries have been among the best economic performers in recent years. The fear, that cuts in spending bring economic showdown, has not materialized and we will come back to this issue in more detail below.

Categories	Countries
Ambitious and early reformers	Belgium, Ireland, Netherlands, New Zealand
Ambitious and late reformers	Austria, Canada, Finland, Norway, Spain, Sweden
"Timid" and early reformers	Australia, Luxembourg, United Kingdom
"Timid" and late reformers	Denmark, France, Germany, Italy, Switzerland, United States
Non reformers	Greece, Japan, Portugal

The countries that were not part of this group of ambitious reformers include some that were genuinely "timid" (France, Germany, Italy, Denmark and to a lesser extent Luxembourg) and some that, having low levels of public spending to start with, had less need to cut spending (Australia, Switzerland and the United States).[4] Australia was in many ways a major reformer but its reforms did not have as great an impact on public spending because public spending had never been too high. The United States could actually be in a category of its own because, for the whole period, it remained a relatively low spending country and, over the period, reduction in defense spending was a major factor in compensating for increases in other areas. Switzerland reported continued low public spending but could nevertheless be called a timid reformer. Finally, the United Kingdom reformed in many areas but early progress with public expenditure reduction was to a significant extent reversed in later years. Nevertheless, for simplicity we refer to all these countries as "timid" (in the strict numeric sense of the term) and distinguish "late" and "early" timid reformers.

Finally, there was a small group of countries where primary expenditure peaked in 2002. This group is referred to as non-reformers and include the rather diverse countries of Greece, Portugal and Japan. It should be noted that in earlier years Greece and Japan had been low spenders.

Stylised facts

A number of interesting findings emerge from the stylized facts for these country groups. First, most countries that reduced public spending started their reform programs in a downturn. Average growth in the period of maximum spending averaged less than one percent per year and, in the first year of spending reduction, it remained slightly below

[4] All ambitious reformers also report primary spending ratio reductions above 5 percent of GDP, all "timid" reformers reduced primary expenditure ratios by less than 5 percent of GDP.

trend on average.[5] This contrasts with the frequently held view by academic economists that the "optimal" timing of reform is in a boom when reforms associated with spending reductions do not exert a pro-cyclical effect. The problem with this view is that policy makers do not see the need for reform during good times.

Second, expenditure declines between the peak year and 2002 were large in many cases (Table 1). This contradicts the pessimistic view that political economy constraints render ambitious reforms virtually impossible. This view, which seems to be influenced considerably by the experience of the largest countries of the euro zone, is sharply challenged by the experience of the ambitious reformers.

Third, in several cases reform efforts often reversed earlier government expansion. Public spending in the groups of late reformers in 2002, for example, was little changed from 20 years earlier (despite the recent reform efforts) and it was much higher than in the countries that reformed early. Only one country, Ireland, was able to reduce public spending to around 35 percent of GDP thus joining the small group of countries with low expenditure levels, a group that included Australia, Switzerland and the United States. But Canada and New Zealand also moved significantly toward joining this group with expenditure levels close to 40 percent of GDP and not far from the level that the authors of this paper had considered feasible and desirable in a previous work. See Tanzi and Schuknecht (1997, 2000).

Composition of Public Spending Reductions

Let us now pay some attention to the composition of public spending to see if it is possible to identify, broadly, the categories that contributed most to total expenditure

[5] The combination of below trend growth and declining spending ratios suggests even stronger declines in spending in cyclically adjusted terms. This is indeed confirmed by cyclically adjusted expenditure ratios. The cyclically adjusted expenditure levels decline significantly after the expenditure peak and they decline by a similar amount as nominal expenditure levels especially over extended time spans.

reduction. In view of the large number of countries, our discussion cannot be detailed. We can only provide broad impressions. Table 2 will help in identifying some patterns.

Table 2: Composition of expenditure changes: max spending ratio-2002
Percent of GDP

	Change total expenditure	Thereof: interest	Change primary spending	Transfers & subsidies 1/	Government consumption	Investment
Australia	-4.6	-3.1	-1.5	1.5	-2.0	-1.0
Austria	-5.9	-0.8	-5.1	-1.5	-1.8	-1.8
Belgium	-10.5	-3.0	-7.5	-4.0	-1.2	-2.3
Canada	-11.4	1.5	-12.9	-7.0	-5.5	-0.5
Denmark	-4.9	-3.7	-1.2	-1.5	0.4	0.0
Finland	-10.3	-2.3	-8.0	-5.4	-2.6	0.0
France	-1.9	-0.8	-1.2	-0.7	-0.3	-0.2
Germany	-1.8	-0.6	-1.2	0.1	-0.8	-0.5
Greece	-4.2	-6.5	2.3	1.4	0.3	0.6
Ireland	-16.4	-6.8	-9.5	-3.1	-5.8	-0.7
Italy	-9.1	-6.1	-3.0	-1.3	-1.0	-0.7
Japan	-0.2	-0.4	0.2	-1.1	2.4	-1.1
Luxembourg	-5.2	-1.1	-4.0	-2.6	-1.5	0.0
Netherlands	-11.2	-2.5	-8.7	-7.7	-1.0	0.0
New Zealand	-14.9	-6.4	-8.5	-8.0	-0.6	0.1
Norway	-6.6	-1.2	-5.4	-5.0	-0.1	-0.4
Portugal	-0.3	-0.2	-0.1	0.2	0.3	-0.6
Spain	-7.7	-2.2	-5.5	-3.7	-1.0	-0.8
Sweden	-9.7	-2.6	-7.0	-5.2	-1.3	-0.5
Switzerland	-1.4	-0.2	-1.2	-1.2	0.3	-0.3
United Kingdom	-4.3	-2.8	-1.4	1.2	-1.6	-1.1
United States	-3.1	-1.9	-1.1	0.2	-1.5	0.1
Average	-6.6	-2.4	-4.2	-2.5	-1.2	-0.5
Euro zone	-7.0	-2.7	-4.3	-2.3	-1.4	-0.6
Ambitous reformers, early	-13.2	-4.7	-8.6	-5.7	-2.1	-0.7
Ambitious reformers, late	-8.6	-1.3	-7.3	-4.6	-2.0	-0.7
Timid reformers, early	-4.7	-2.4	-2.3	0.1	-1.7	-0.7
Timid reformers, late	-3.7	-2.2	-1.5	-0.7	-0.5	-0.3
Non reformers	-1.6	-2.4	0.8	0.2	1.0	-0.4

Source: EU Commission, AMECO

1/ Calculated as residual of primary spending minus investment and consumption.

About a third of the total average expenditure reduction (between the maximum spending year and 2002) was due to the fall in interest payments. Interest spending declined by 2.4 percent of GDP for the whole group and by 2.7 percent of GDP for the euro zone. The fall in inflationary expectations was particularly important for some countries (Italy and Greece). This fall reduced nominal interest rates and consequently interest payments. However, for some ambitious reformers (mainly Ireland and New Zealand), the fall in the share of public debt to GDP, and not the fall in inflation, was the main determinant.

It is primary spending that better reflects fiscal reform. This spending fell by a little more than four percent of GDP for all countries. However, there were major differences across countries. The reduction from the peak level was a remarkable 12.9 percent of GDP in Canada, 9.5 percent of GDP in Ireland, and 8 percent or more in the Netherlands (8.7 percent), in New Zealand (8.5 percent), and in Finland (8 percent). The experience of these countries deserves to be studied in detail to see how they achieved these reductions and what impact these reductions had on socio-economic indicators. The reductions were also large in Sweden (7 percent) and Belgium (7.5 percent) and significant in Austria, Norway, Spain (more than 5 percent) and a few other countries. This is the category where the differences between ambitious performers and timid performers are most noticeable. See Table 2. As mentioned above, countries that never had a high level of primary spending (Australia, Japan, Switzerland and the United States) had fewer possibilities of or reasons for reduction.

Let us now consider the composition of primary spending. Reduction in "transfers and subsidies" explain half of the total decline of primary spending. This is the category of spending that had grown the most in the 1960-1982 period. Again differences across countries are noteworthy: ambitious reformers reduced transfer and subsidies by about 6

percent of GDP (and much more in individual cases) while spending on this category changed little for the other country groups. Once again, New Zealand, the Netherlands, Canada and Finland led the way in reductions in this category. Large reductions were also witnessed by Sweden and Norway. Government consumption declined by about two percent of GDP in the groups of early and/or ambitious reformers and little amongst late/timid and non-reformers. Reduction in Ireland and Canada in this category was well above that in other countries. Public investment fell in all country groups by 0.3 to 0.7 percent of GDP. However, these are reductions from peak levels. In Belgium and Austria public investment fell most, by about two percent of GDP.

In conclusion, the major distinguishing feature in the composition of reform, between ambitious and timid (or non-) reformers is the curtailment of transfers and subsidies. This is the category that had grown the most in earlier years. Putting it the other way round, a country that wants to reduce its public expenditure ratio by a significant size has to tackle welfare programmes. Other expenditure categories offer fewer opportunities for reduction. Over the long run a reduction in public debt can also make a major contribution to the reduction in public spending when the initial debt level is high.

Table 3 does not support the belief that ambitious reformers have cut primarily productive spending. Education and health spending developed only slightly less favourably across ambitious reformers than across timid ones. On the other hand, pension spending was contained much better in the group of ambitious reformers.

Table 3: Change in expenditure ratio: maximum spending-2002, selected functional categories
Percent of GDP

	health	education	pensions
Australia	0.9	-0.5	1.3
Austria	-0.8	0.3	-0.3
Belgium	0.5	-0.1	0.7
Canada	-0.8	-2.0	0.0
Denmark	0.3	0.6	-0.7
Finland	-0.9	-1.8	-1.2
France	0.0	-0.2	-0.1
Germany	0.3	-0.2	0.2
Greece	0.2	0.9	1.2
Ireland	-0.8	-1.5	-1.9
Italy	0.2	-0.4	0.3
Japan	0.8	0.1	0.0
Luxembourg	-0.2		1.4
Netherlands	0.1	-2.1	-0.5
New Zealand	0.5	1.9	-1.4
Norway	0.8	-1.3	0.0
Portugal	-0.1	0.0	0.0
Spain	-0.1	0.0	0.0
Sweden	0.5	0.2	-0.9
Switzerland	-1.4	0.0	0.0
United Kingdom	1.3	-0.7	4.0
United States	1.0	-0.4	-0.1
Average	0.1	-0.3	0.1
Euro zone	-0.1	-0.5	0.0
Ambitous reformers, early	0.1	-0.4	-0.8
Ambitious reformers, late	-0.2	-0.8	-0.4
Timid reformers, early	0.7	-0.6	2.2
Timid reformers, late	0.1	-0.1	-0.1
Non reformers	0.3	0.3	0.4

OECD, Social expenditure database and national accounts

III. Public Expenditure Reform and Socio-Economic Indicators

In this section, we look at a number of socio-economic indicators across countries and country groups to gage the response, if any, of these indicators to the timing and ambition of expenditure reduction. Specifically, we look at public finance, economic performance, human development, income distribution and institutional quality indicators. This is in line with our view that governments engage in public spending to a large extent to influence in desirable ways various socio-economic indicators.

a. Framework for assessing the impact of expenditure reform

In assessing the impact of expenditure reduction, we focus primarily on medium and long-term influences and on different degrees of reform ambition. We have to deal with a number of data shortcomings: there are only 22 countries with at most one turning-point (start of reform) per country. Some data on socio-economic indicators are not available on an annual basis but only at 5-year or even 10-year intervals. Therefore we will not endeavour to force the data into a superficially sophisticated econometric analysis. Rather we shall try to extract some stylized facts and patterns about the relationships. We employ three approaches.

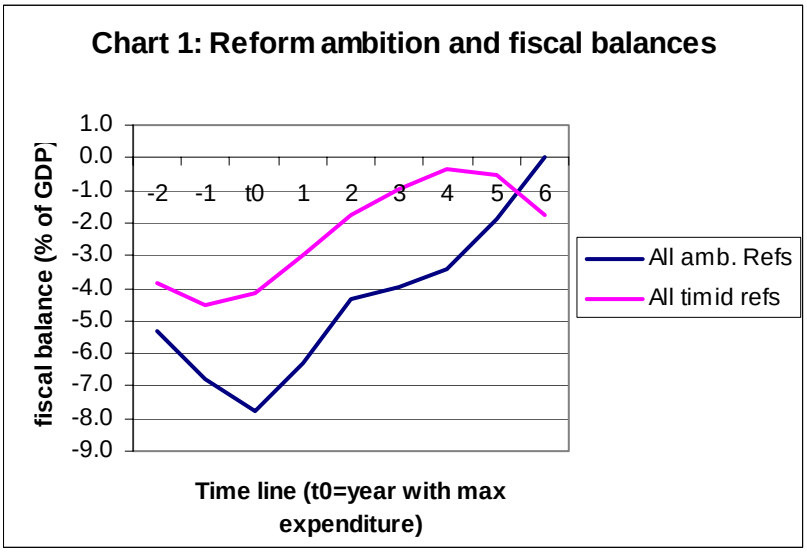
For the medium-term analysis, we set the year of maximum expenditure at t0 and label subsequent and earlier years accordingly. This makes it possible to compare countries with ambitious versus those with less ambitious reforms as well as the impact of timing. We shall report the results for these country groups where appropriate. However, because several countries started reducing their public spending only in the early- to mid-1990s this analysis has its limits because the number of observations shrinks rapidly after a few years, say after t7. Moreover, this approach is not useful for variables with less than annual data. This analysis might give progressively stronger results, the more years become available beyond 2002.

For the medium to long-term analysis, and for those variables with infrequent data, we look at 5 year averages/intervals and at changes over these averages/intervals. We shall pay particular attention to different degrees of reform ambition resulting in expenditure cuts and to the question when the impact of reform appears to set in. Finally, we shall estimate simple cross-section correlations of levels and changes to complement the other methods and to add some robustness to the results.

b. Soundness of public finances

One of the objectives of public expenditure reduction is to enhance the sustainability of public finances. This, in turn, is conducive to macroeconomic stability, more favourable financing conditions and (for example, via promoting the stability of the tax system) a more friendly environment to work, invest and innovate (European Commission, 2004). The two most common variables measuring the soundness of public finances are the fiscal deficit and the ratio of public debt to GDP.

The average fiscal deficit across all countries declined significantly over the past 20 years and in particular after several countries started reforming their expenditure. Fiscal consolidation was more successful in the countries with ambitious reforms. In these countries fiscal balances improved by about 8 percent of GDP on average within six years from the peak expenditure level (Chart 1). Timid reformers reported an average improvement of about half that amount. However, several of them had lower initial fiscal deficits.



Medium to long-term trends in fiscal balances confirm that ambitious reformers achieved significant and more lasting consolidation than timid reformers while non reformers showed the least fiscal deficit improvements.

Table 4a shows average deficits for 5-year periods between the late 1970s and the turn of the century. Reforming countries as a group were in surplus or had only limited deficits for the most recent 5-year period while non-reformers had still significant average deficits. The last column shows the improvement in the deficit since expenditure started to decline, again pointing to a deficit reduction more than twice as high for ambitious reformers. However, as already stated, they started with larger deficits than timid reformers. Moreover, expenditure reduction by ambitious reformers financed significant reductions in the tax burdens. This can be measured by comparing the last column of Table 1 with that of 4a. Tax cuts averaged over 5 percent of GDP for ambitious and early reformers. By comparison revenue reductions by timid reformers were limited to 1-2 percent of GDP and the tax burden increased significantly in non-reforming countries.

Table 4: Fiscal variables and expenditure reform

a. Fiscal balances, 5-year averages

	First reform wave		Second reform wave		Change
	1983-87	1988-92	1993-97	1998-2002	since reform
Average, all countries	-3.8	-2.9	-3.3	0.2	
Euro area	-4.9	-3.9	-4.1	-0.5	
Ambitous reformers, early	-7.0	-4.2	-1.5	0.6	7.6
Ambitious reformers, late	-1.5	-1.6	-3.6	2.5	6.1
Timid reformers, early	-1.1	-0.7	-1.9	1.8	2.9
Timid reformers, late	-4.5	-3.5	-3.7	-0.8	2.9
Non reformers	-6.1	-4.9	-5.9	-4.8	

b. Gross public debt, 5-year averages

	First reform wave		Second reform wave		Change
	1983-87	1988-92	1993-97	1998-2002	since reform
Average, all countries	55.9	58.2	68.5	62.1	
Euro area	56.1	62.2	72.8	65.5	
Ambitous reformers, early	91.1	91.8	81.9	61.1	-30.0
Ambitious reformers, late	47.3	50.1	68.8	60.8	-8.0
Timid reformers, early	28.8	22.6	29.4	21.1	-7.6
Timid reformers, late	52.5	56.6	70.1	66.1	-4.0
Non reformers	60.4	68.3	86.0	99.4	

Source: EU Commission, AMECO

Given that a significant share of expenditure reforms was used for fiscal consolidation, it comes as no surprise that expenditure reduction is strongly correlated with progress in debt reduction. However, the figures also show that debt reduction is a "marathon" and requires time and political tenacity. Table 4b reports debt ratios for the country groups for the same 5-year periods as Table 4a. It is noteworthy that the debt ratio among early and ambitious reformers was initially very high (they include e.g. Belgium and Ireland which had the highest debt ratios amongst OECD countries). Since then, it has come down by an average of 30 percent of GDP since the late 1980s when debt for the group peaked on average. The early and timid reformers started with a low debt ratio which declined further. Amongst late and ambitious reformers, progress with gross debt reduction has, so far, been less spectacular. But the figures hide the fact that the Nordic

countries, which are part of this group (Finland, Norway, Sweden), have been accumulating significant public assets during recent years so that the net worth of the public sector has improved by more than shown by the table.

Timid and late reformers, in recent years, have managed to halt and slightly reverse the trend of increasing debt ratios experienced in the previous years. However, because some deficits remained and, as we see below, trend growth has not accelerated, progress in this area has been limited. Note again the significant increase in the debt ratio of non-reformers which reflects Japan's strong fiscal deterioration but also the continued upward creep in Portuguese and Greek public debt.

In summary, expenditure reforms can show quick results in improving deficit figures, but they must be ambitious and durable in order to reverse adverse debt dynamics and significantly reduce public debt ratios.[6]

c. Economic and employment performance

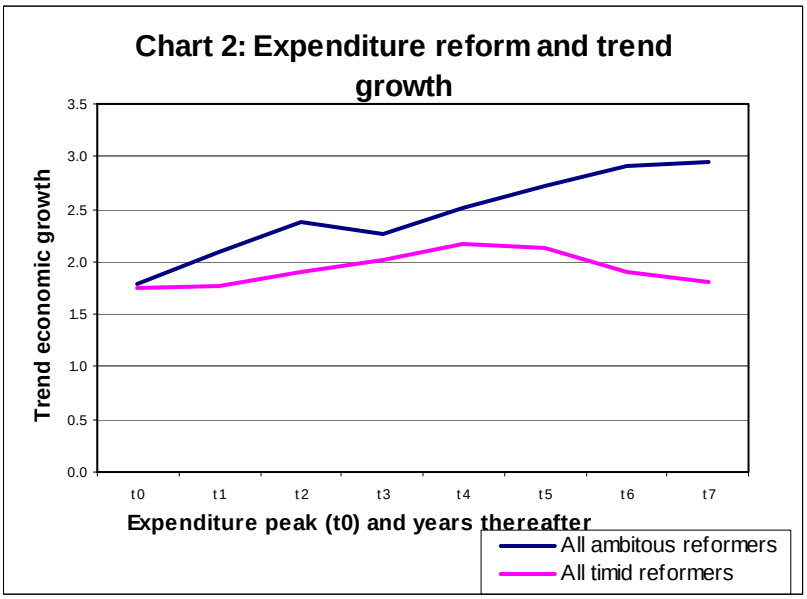
Another favourable effect of public expenditure reduction should be the improvement of supply side conditions via better tax-benefit systems, more efficient government bureaucracy, and less distortionary taxes (see for surveys, Afonso et al, 2004; European Commission 2004). We look at two variables to proxy the relationship between expenditure reform and economic performance: economic growth and the employment ratio.

Considering real GDP growth after the expenditure reforms, it is noteworthy that, on average, expenditure reductions, even ambitious ones, were not accompanied by declines in economic growth. On the contrary, in most cases growth started to improve

[6] See also Alesina and others (e.g. Alesina and Perotti, 1995; Briotti, 2004 for a survey) who argue that expenditure reform is key for longer-lasting public finance consolidation, sustained debt reduction and favourable growth effects.

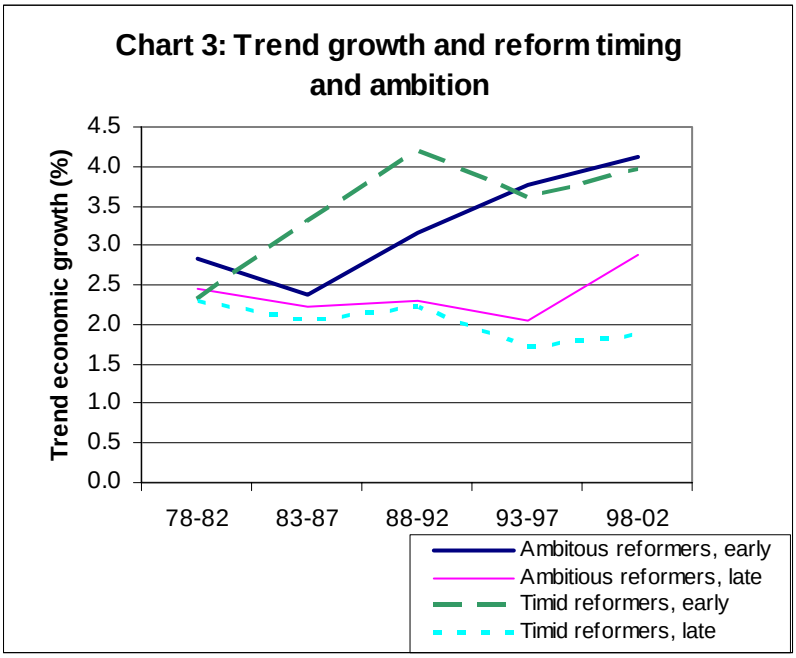
slowly immediately after the onset of reform. These facts do not support the fear expressed by many policy makers and some observers that public expenditure reduction hurts growth.

However, because we are more interested in the medium to the long term implications, it is more relevant to look at trend growth developments. Two main results seem noteworthy. First, the recovery of sustained growth takes time. People must become convinced that the reforms will not be reversed. Second, the increase in trend growth is higher for the ambitious reformers. Chart 2 shows that trend growth for both ambitious and timid reformers averaged exactly the same uninspiring 1.8 percent of GDP at the peak of public spending, that is at time t0. The growth rate rose about twice as fast in the ambitious reformers' group and reached almost 3 percent after 6 years, that is at time t6.



The medium to long-term analysis confirms this picture but it also illustrates the "head start" of the early reformers. Looking at 5-year period averages (Chart 3), early reformers managed to raise trend growth from near 2 percent in the early 1980s to near 4 percent in the mid-1990s and since then it has stayed broadly constant. Amongst late reformers, those with ambitious programs reported an average trend growth rate that was

boosted from 2 percent until the mid-1990s to 3 percent per annum since then. Trend growth of timid reformers has so far remained little changed.[7]



Of course, the above analysis is based on stylised facts and there are some caveats. For example, non-fiscal structural reforms may have been more important to boost trend growth than public expenditure reductions. This may have been the case for countries that had low public expenditure ratios in the whole period such as Australia and the United States. Additional robustness checks would clearly be desirable. Moreover, trend growth is to some extent correlated with the cycle so that part of the initial trend growth increase may reflect the fact that reforms started during a downturn. But the findings are consistent with those of Tanzi and Schuknecht (2003) and Afonso et al (2004) that look at the relationship between public expenditure and growth trends. Tanzi and Schuknecht, for example, reported the stylised fact that a 10 percent increase in the spending ratio had reduced long term growth by about 1.5 percent over the 1960 to 2000 period.

[7] The growth performance of non-reformers is rather diverse. Trend growth in Portugal slowed down over the past 20 years. While such data is not available for Japan, nominal growth and rolling averages also suggest such a pattern for this country. Greece has seen an upward revision in trend growth in recent years although some concerns about the influence of temporary and extraordinary factors (euro area entry, Olympic games) have also been voiced.

Employment developments parallel the picture for trend growth (Table 5). The employment ratio was relatively similar across country groups in the late 1970s, apart for the early, ambitious reformers where it was much lower. By the mid 1980s it had fallen in all groups. However, the picture started changing thereafter. Early ambitious reformers experienced a limited increase in the employment ratio in the following ten years, that was not much larger than for the other early but timid reformers (although it is the only group with a rising ratio in the early 1990s). Perhaps there was a significant labor shake out early in the reform process, especially in connection with the privatization of public enterprises; perhaps confidence took time to build; perhaps the focus of these reforms was not on employment incentives so that initial aggregate changes were limited. However, in the late 1990s, the employment ratio for the ambitious early reformers rose rapidly, so that the overall gain in the employment ratio since the onset of reform exceeded 8 percent (last column of Table 5).

Table 5: Employment ratio and expenditure reform

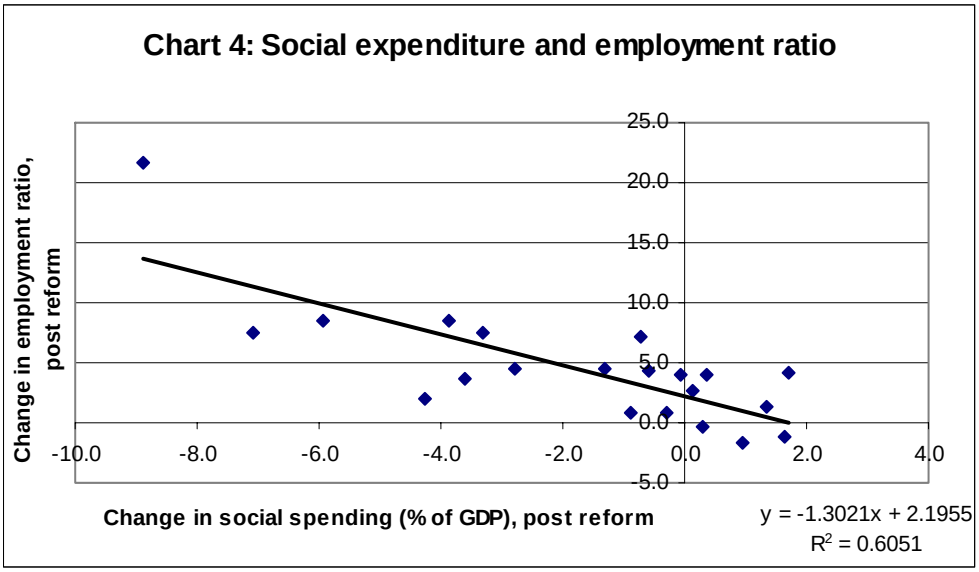
	First reform wave		Second reform wave		Change
	1983-87	1988-92	1993-97	1998-2002	since reform
Average, all countries	65.4	67.1	66.0	69.3	
Euro area	60.2	61.8	60.6	64.7	
Ambitous reformers, early	56.0	57.0	58.4	64.4	8.3
Ambitious reformers, late	69.7	70.7	66.7	70.2	3.5
Timid reformers, early	65.6	68.2	67.5	70.0	4.4
Timid reformers, late	67.7	70.4	69.8	72.2	2.4
Non reformers	64.9	65.7	65.4	67.4	

Source: EU Commission, AMECO

The late and ambitious adjusters reported an employment ratio in the mid-1990s that was well below the late 1970s. But it increased strongly together with expenditure

reform in recent years. Non-reformers now show an employment ratio that is lower than it was 25 years ago.

The correlation between employment ratios and social expenditure reform is particularly noteworthy. Chart 4 represents the change in the social expenditure ratio and in the employment ratio since the expenditure peak was reached. There is a rather significant correlation between the two with a 1 percentage point decline in the social spending-to-GDP-ratio being correlated with a 1.3 percentage point increase in the employment ratio.



d. Income distribution and human development

Many critics of public expenditure reform point to potential adverse implications for income distribution and human development. As shown in Table 2, expenditure reform has led to cuts in social transfers and spending that presumably disproportionately benefited the less well off. However, this latter hypothesis has received limited empirical backing. Some studies have pointed to underlying reasons why social spending is poorly targeted; public investment is not always productive; and government consumption does not necessarily mean more education or more security but at times more waste and red

tape. Higher taxes and less innovation and productivity gains may ultimately translate into less employment and wage gains for lower income individuals. Gross social spending, as used in some analytical studies, may not appropriately reflect the role of the state because the effect of the tax system, especially tax expenditure, and of private social support is not taken into account.[8]

Here, we consider the possible correlation between expenditure reform and income distribution by looking at three types of indicators available from the OECD for most industrialised countries. Unfortunately these indicators are not available annually. It is nevertheless fortunate that the OECD provides observations for the mid 1980s and mid 1990s (which coincide broadly with the two main "waves" of expenditure reform) and for 2000 so that we have at least an impression of levels and changes in the past 15 years.

The picture that arises from these data and their correlation with public expenditure developments is rather complex.

First, income distribution in industrialized countries has become less equal since the mid-1980s (Table 6a-c, first line). The share of the population that lives on less than half the median income has increased by about 1 percent, rising to about 10 percent of the total population; the Gini coefficient has risen from an average of 0.28 to 0.294; and the income share of the poorest 20 percent of households has fallen from 8.6 to 8.2 percent.

[8] See, for example, Tanzi and Schuknecht (2000), Tanzi (2004), Adema (2004) on net social spending, and various other OECD studies on the targeting of social spending, income distribution indicators etc. [to be completed].

Table 6: Income distribution and expenditure reform

a. Share of total population below 50% of median income

	Mid-1980s	Mid-1990s	2000	mid-1980s-2000
Average, all countries	9.0%	9.6%	10.1%	1.1%
Euro area	9.3%	10.1%	10.5%	1.2%
Ambitous reformers, early	6.5%	8.4%	10.6%	4.1%
Ambitious reformers, late	6.4%	6.7%	7.5%	1.1%
Timid reformers, early	6.9%	10.9%	11.4%	4.5%
Timid reformers, late	9.6%	10.3%	10.3%	0.6%
Non reformers	14.8%	14.2%	13.6%	-1.2%

b. Gini coefficient

	Mid-1980s	Mid-1990s	2000	mid-1980s-2000
Average, all countries	28.0	29.0	29.4	1.3
Euro area	28.7	29.5	29.6	0.9
Ambitous reformers, early	27.8	30.3	29.7	1.9
Ambitious reformers, late	23.6	24.4	26.3	2.7
Timid reformers, early	29.9	30.8	31.5	1.6
Timid reformers, late	28.3	29.3	29.2	0.9
Non reformers	34.5	34.7	35.0	0.5

c. Income share of poorest quitile of households

	Mid-1980s	Mid-1990s	2000	mid-1980s-2000
Average, all countries	8.6%	8.4%	8.2%	-0.4%
Euro area	9.0%	8.7%	8.5%	-0.4%
Ambitous reformers, early	9.4%	8.9%	8.9%	-0.5%
Ambitious reformers, late	9.9%	10.0%	9.4%	-0.5%
Timid reformers, early	8.3%	8.0%	7.8%	-0.5%
Timid reformers, late	8.3%	8.1%	7.9%	-0.4%
Non reformers	7.9%	7.6%	7.6%	-0.3%

d. Per-capita GDP poorest quintile, 1995 prices, PPP US$

	Mid-1980s	Mid-1990s	2000	mid-1980s-2000
				% change
Average, all countries	7374	8677	9893	34.2
Euro area	6917	8128	9458	36.7
Ambitous reformers, early	7273	8456	10400	43.0
Ambitious reformers, late	9213	10532	11813	28.2
Timid reformers, early	6936	8141	9036	30.3
Timid reformers, late	7735	9047	9860	27.5
Non reformers	4299	4984	5819	35.4

Source: OECD

Second, and as expected, there is indeed a positive correlation between total public spending and the income distribution indicators, but there is much less correlation between changes in public spending and changes in these indicators. Since it is the changes that are

important in assessing the impact of fiscal reform, this points to a rather limited trade-off from expenditure reform in terms of income distribution. Consider Table 7. The correlation coefficient between total expenditure and the relevant indicators of income distribution for the year 2000 is 0.43 to 0.62.[9] But that for changes in public spending and income distribution since expenditure reform started is only 0.23 for the income share of the poorest 20 percent and 0.37 for the Gini coefficient. Only for the share of households below 50 percent of median income, the correlation is statistically significant. For all these variables, the correlation with public spending is even weaker (rather than stronger) when looking at levels and changes in social spending.

Table 7: Correlation coefficients, income distribution / human development- total expenditure

	Total expenditure, 2000	Change in expenditure, post reform-2000
Share below 1/2 median income, 2000	-0.62	
Change, post reform-2000		-0.59
Gini coefficient, 2000	-0.50	
Change, post reform-2000		-0.37
Income share, bottom quintile, 2000	0.43	
Change, post reform-2000		0.23
Human development index, 2000	0.02	
Change, post reform-2000		-0.36

Source: OECD, UNDP

This finding of a modest relation between expenditure and income distribution changes is consistent with the literature that looks at the "targeting" and distributional implications of social spending. Arjona, Ladaique and Pearson (2001), for example, found that the distributional effects of government spending, net of "churning", was very small in

[9] The correlation coefficient for net spending and income distribution in 1997 is 0.57 (on the basis of data by Adema, 2001).

some "big" government countries such as Germany, France and Italy and hardly exceeded that of the United States. Moreover, the targeting of social spending has improved in a number of countries that have undertaken significant expenditure reform. In fact these reforms seem to force governments to better target their social spending.

Third, expenditure reform has resulted in an "equalization" of income distribution patterns across country groups. This can be seen in Table 6. Ambitious reformers, for example, reported more equal than average income distribution in the mid-1980s. By 2000, indicators had worsened but they still show a relatively favourable situation for the poor in this group relative to the average for all countries. If expenditure reform had a significantly adverse impact on income distribution, timid reformers should report more favourable changes than ambitious reformers. But this is not the case and changes are rather similar across these country groups. Non-reformers report unfavourable income distribution indicators that also have not improved much relative to the other groups. This supports the above finding that changes in spending and income distribution are only weakly correlated.

So far we looked at income distribution in relative terms. One can also compare absolute income levels of the poorest quintile by countries. Stronger growth has on average moderated and in some cases over-compensated the changes in the income share of the poorest quintile for ambitious reformers. For example, since 1990, the absolute position of the poorest quintile has improved most among ambitious and early reformers (from 5 percent below average to 5 percent above). At the same time, the position of the poor in timid and late reformers may not have deteriorated much within the country but it has relative to those that grew faster. Living standards amongst the poorest quintile are still highest in the group of late and ambitious reformers (15 percent above the average for all sample countries). (See Table 6d.)

Finally, we examine indicators for the "quality of life". Many indicators could be looked at, including living standards, health and education standards, infrastructure quality, crime, and environment. We limit ourselves in this study to the UN Human Development Index (HDI) which combines indicators of longevity, educational attainment and enrollment ratios and living standards (per-capita GDP, PPP US$) (UNDP, 2003). We find no correlation between the level of total spending and the HDI (Table 7).

d. Quality of institutions

The past 20 years have witnessed a renaissance of classical economists' thinking as to the role of government in setting the rules of the game for itself and for markets. A sound institutional framework can promote growth and economic dynamism in the neoclassical sense of facilitating factor accumulation and productivity. This is because good institutions create an environment in which property rights are protected and contracts are enforced and where people are free to make contracts at a level playing field. As a consequence, incentives to save, invest, work and innovate are boosted.[10]

The fiscal role of the state is indirectly linked with the quality of institutions as it is hard to conceive a functioning market economy without well-trained and well paid policymakers, administrators, judges and policemen (Tanzi and Schuknecht, 2000; van Rijckeghem and Weder, 2002). In as much as higher spending aims to achieve this purpose, it should improve the institutional environment of an economy. However, if higher spending means more bureaucratic red tape, more rent seeking opportunities (which in turn breed corruption) and a large informal economy (because of the higher tax rates that

[10] See economists and political philosophers from David Hume and Adam Smith to the Austrian School of Economics, public choice and institutional economics with proponents such as Hayek, Buchanan or Douglas North.

high spending requires), that does not benefit from protective institutions, then a reduction in public expenditure could well imply an improved institutional environment.[11]

We look at four indicators to measure institutional quality. The first three on corruption, red tape and quality of the judiciary are surveys based and published in the World Competitiveness Report since about 1990. The fourth is a composite indicator, measuring the quality of the legal structure and the security of property rights. It is available as a sub-indicator of the Fraser Institute's Economic Freedom measure since the mid-1970s.

As regards the overall level of these indicators, industrialized countries on average report very high levels (Table 8a and b). This suggests that the institutional infrastructure operates well. While red tape and corruption seem to have worsened, the legal structure and security of property rights have improved in the past 10-15 years. Southern European countries and Japan fare relatively poorly. Scandinavian countries report significant improvements in these indicators while the picture for Anglo-Saxon countries and other continental European countries is more mixed.

[11] While we limit ourselves to analyzing aggregates, a more detailed analysis of spending composition would be warranted in this context.

Table 8: Institutional indicators and expendtiure

a. Corruption, red tape, quality of judiciary

	Corruption		Change	Red tape		Change	Quality of the judiciary		Change
	1990	2001	1990s	1990	2001	1990s	1990	2001	1990s
Australia	6.6	8.2	1.6	4.1	4.9	0.8	7.8	8.5	0.7
Austria	5.2	6.9	1.7	4.9	4.1	-0.7	7.3	9.0	1.7
Belgium	5.5	5.2	-0.3	3.8	2.8	-1.0	6.2	5.7	-0.5
Canada	7.5	7.8	0.3	4.6	4.6	0.0	8.4	8.5	0.1
Denmark	9.2	9.0	-0.1	4.7	5.0	0.3	8.4	8.6	0.2
Finland	7.8	9.5	1.7	5.5	6.4	0.9	8.4	8.7	0.3
France	6.0	4.2	-1.8	4.1	1.8	-2.3	6.2	5.9	-0.4
Germany	7.6	6.9	-0.7	4.8	3.9	-0.9	8.2	8.2	0.1
Greece	2.8	3.0	0.2	1.9	2.3	0.4	5.0	6.2	1.2
Ireland	7.0	5.5	-1.4	5.3	5.6	0.3	8.1	7.6	-0.5
Italy	2.6	3.5	1.0	2.8	2.0	-0.8	3.2	3.6	0.4
Japan	5.5	4.3	-1.2	5.3	2.6	-2.7	7.8	6.3	-1.5
Luxembourg	5.5	7.4	1.9	3.8	4.1	0.3	6.2	7.5	1.3
Netherlands	8.1	8.0	-0.2	5.4	4.7	-0.7	8.1	8.3	0.1
New Zealand	8.4	8.8	0.3	6.3	4.3	-1.9	7.9	8.3	0.4
Norway	7.4	8.1	0.7	4.0	3.0	-1.0	8.2	8.3	0.1
Portugal	4.5	3.9	-0.6	3.3	2.2	-1.1	8.0	2.7	-5.3
Spain	3.8	5.6	1.8	3.2	4.0	0.8	2.9	4.4	1.5
Sweden	7.6	8.6	1.0	4.6	5.6	1.0	7.1	8.5	1.5
Switzerland	7.9	7.2	-0.7	6.1	5.4	-0.7	8.7	8.0	-0.7
United Kingdom	8.0	6.8	-1.2	6.0	3.1	-2.8	7.5	7.4	-0.1
United States	6.5	6.6	0.0	5.3	3.7	-1.6	7.6	7.1	-0.5
Average	6.4	6.6	0.2	4.5	3.9	-0.6	7.1	7.1	0.0
Euro zone	5.5	5.8	0.3	4.1	3.7	-0.4	6.5	6.5	0.0
Ambitous reformers, early	7.3	6.9	-0.4	5.2	4.4	-0.8	7.6	7.5	-0.1
Ambitious reformers, late	6.5	7.7	1.2	4.5	4.6	0.2	7.1	7.9	0.9
Timid reformers, early	6.7	7.5	0.8	4.6	4.1	-0.6	7.2	7.8	0.6
Timid reformers, late	6.6	6.2	-0.4	4.6	3.6	-1.0	7.0	6.9	-0.2
Non reformers	4.3	3.7	-0.5	3.5	2.4	-1.1	6.9	5.0	-1.9

Source: World Competitiveness Report and AMECO

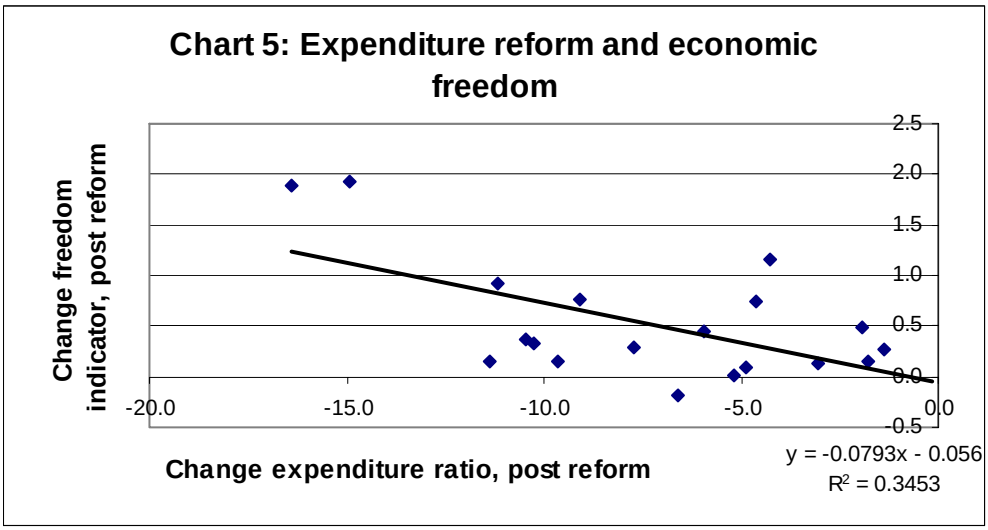
Table 8: Institutional indicators and expendtiure continued

b. Economic freedom (Chapter 2, legal structure and security of property rights)

Countries	1980	1985	1990	1995	2000	Change post-reform
Australia	7.3	7.9	7.9	8.8	9.5	1.6
Austria	8.0	7.9	8.3	8.6	9.3	0.8
Belgium	7.8	7.9	8.3	7.3	8.3	0.4
Canada	7.2	7.9	8.3	8.9	9.3	0.3
Denmark	7.2	7.9	8.3	8.9	9.5	0.6
Finland	6.8	7.9	8.3	9.1	9.5	0.4
France	6.8	7.2	7.7	7.4	8.1	0.7
Germany	7.7	7.5	8.3	9.0	9.1	0.2
Greece	5.6	5.6	6.8	6.6	5.7	
Ireland	7.1	6.7	7.7	8.9	9.0	2.3
Italy	5.7	6.8	7.7	5.7	7.7	1.9
Japan	7.9	7.2	7.7	7.8	8.2	
Luxembourg	7.8	8.3	8.3	8.9	8.3	0.0
Netherlands	7.5	8.3	8.3	8.9	9.6	1.3
New Zealand	8.0	7.9	8.3	9.0	9.1	1.2
Norway	7.0	8.1	8.3	9.0	8.8	-0.1
Portugal	8.0	6.1	7.7	7.6	7.6	
Spain	6.3	6.4	7.2	7.4	7.5	0.2
Sweden	6.6	7.4	8.3	8.6	9.0	0.5
Switzerland	8.1	8.3	8.3	8.9	9.3	0.3
United Kingdom	7.0	6.7	7.7	8.9	9.3	2.6
United States	8.3	8.3	8.3	8.6	9.2	0.6
Average	7.3	7.5	8.0	8.3	8.7	0.8
Euro zone	7.1	7.2	7.9	7.9	8.3	0.8
Ambitous reformers, early	7.6	7.7	8.2	8.5	9.0	1.3
Ambitious reformers, late	7.0	7.6	8.1	8.6	8.9	0.3
Timid reformers, early	7.4	7.6	8.0	8.9	9.0	1.4
Timid reformers, late	7.3	7.7	8.1	8.1	8.8	0.7
Non reformers	6.8	5.8	7.2	7.1	6.7	

Source: Gwartney et. al, Fraser Institute

On the whole, there is no clear correlation for the industrialized countries between the size of government and institutional quality. But there is a modest to strong correlation between changes in public spending since the onset of reform and changes in institutional quality which implies that a reduction in public spending raises institutional quality. The correlation (coefficient of -0.58) between, for example, changes in public expenditure ratios and property rights/economic freedom is illustrated by Chart 5.



IV. Conclusion

Overall, we find that ambitious expenditure reform is correlated with improvement in fiscal, economic, human development and institutional indicators. Positive developments associated with expenditure reform, in some instances, have taken a while to materialize and early and persistent reformers have, hence, benefited more from them. Unfavourable effects on income distribution within countries are small and are mitigated in absolute terms by faster growth and by the possibilities of better targeting of public spending. Moreover, there is significant divergence across countries that suggest that country circumstances and reform design matter.

Bibliography:

Adema, Willem (2001) Net Social Expenditure, 2nd edition, OECD Labour Market and Social Policy Occasional Paper No. 52, Paris: OECD.

Afonso, Antonio, Ludger Schuknecht and Vito Tanzi (2004/5 forthcoming) Public Sector Efficiency: an International Comparison, European Central Bank Working Paper 242 and forthcoming in Public Choice.

Afonso, Antio, Werner Ebert, Michael Thoene and Ludger Schuknecht (2004) The Quality of Public Finances and Economic Growth, Frankfurt: forthcoming ECB Working Paper.

Alesina, A and R. Perotti (1995) Fiscal expansions and adjustments in OECD countries, Economic Policy, No. 21

Arjona, Roman, Maxime Ladaique and Mark Pearson (2001) Growth, Inequality and Social Protection, OECD Labour Market and Social Policy Occasional Papers No 51, Paris: OECD.

Briotti, Maria Gabriella (2004) Fiscal adjustment between 1991 and 2002: Stylised facts and policy implications, European Central Bank Occasional Paper Series

European Commission (2004) Public Finance Report, Brussels.

Gwartney, J.; Lawson, R.; Park, W.; Wagh, S.; Edwards, C. and de Rugy, V. (2002). *Economic Freedom of the World: 2002 Annual Report. Vancouver*, the Fraser Institute.

International Institute for Management Development (2001). *The World Competitiveness Yearbook 2001*.

OECD (1995) Income Distribution in OECD Countries, Paris.

OECD (2001) *Social Expenditure Database* and *National Accounts***,** Paris.

OECD, Labour Market Statistics, Paris.

Tanzi, Vito (2004) A Lower Tax Future: the Economic Role of the State in the 21st Century, paper published by Politeia, London.

Tanzi, Vito and Ludger Schuknecht (1997) Reconsidering the Fiscal Role of Government: The International Perspective, The American Economic Review Volume 87, No. 2

Tanzi. Vito and Ludger Schuknecht (2000). *Public Spending in the 20th Century: A Global Perspective*, Cambridge: Cambridge University Press.

Tanzi, Vito and Ludger Schuknecht (2003) Public Finances and Economic Growth in European Countries, in Oestereichische Nationalbank (ed.) Fostering Economic Growth in Europe, Vienna.

United Nations Development Programme (2003) Human Development Report 2003, New York: Oxford University Press.

Van Rijckeghem, Caroline and Beatrice Weder (2002) Bureaucratic Corruption and the Rate of Temptation: Do Wages in the Civil Service Affect Corruption and by How Much? In G. Abed and S. Gupta (eds) Governance, Corruption and Economic Performance, IMF: Washington DC, 59-88.

Annex Table – Variables and series

Variable	Sources
All fiscal variables (except functional expenditure)	European Commission, Ameco
Output, employment and income variables	European Commission, Ameco (trend growth and employment ratio); OECD (per-capita GDP, PPP US$)
Income distribution	OECD(share of population below 50 percent of median income, Gini coefficient, income share of poorest quintile of households)
Corruption	World Economic Forum: The World Competitiveness Report 1990, item "10.22 Corruption (for 1990) World Economic Forum, The World Competitiveness Yearbook 2001, item 2.3.16 Bribing and corruption (for 2001).
Red tape	World Economic Forum: The World Competitiveness Report 1990, item "6.21 Regulatory environment (for 1990) World Economic Forum, The World Competitiveness Yearbook 2001, "Bureaucracy" (for 2001).
Efficient judiciary	World Economic Forum: The World Competitiveness Report 1990, item "10.04 Confidence in administration o justice" (for 1990) World Economic Forum, The World Competitiveness Yearbook 2001, "Justice" (for 2001).
Economic freedom	Gwartney et. al, Fraser Institute (various issues) Freedom in the World, Vancouver.
Public education	OECD, Social expenditure database and national accounts
Public health	OECD, Social Expenditure database and national accounts
Public pension	OECD, Social Expenditure database.

European Central Bank working paper series

For a complete list of Working Papers published by the ECB, please visit the ECB's website (http://www.ecb.int)

402 "Forecasting euro area inflation using dynamic factor measures of underlying inflation" by G. Camba-Méndez and G. Kapetanios, November 2004.

403 "Financial market integration and loan competition: when is entry deregulation socially beneficial?" by L. Kaas, November 2004.

404 "An analysis of systemic risk in alternative securities settlement architectures" by G. Iori, November 2004.

405 "A joint econometric model of macroeconomic and term structure dynamics" by P. Hördahl, O. Tristani and D. Vestin, November 2004.

406 "Labour market reform and the sustainability of exchange rate pegs" by O. Castrén, T. Takalo and G. Wood, November 2004.

407 "Banking consolidation and small business lending" by E. Takáts, November 2004.

408 "The great inflation, limited asset markets participation and aggregate demand: FED policy was better than you think" by F. O. Bilbiie, November 2004.

409 "Currency mismatch, uncertainty and debt maturity structure" by M. Bussière, M. Fratzscher and W. Koeniger, November 2004.

410 "Do options-implied RND functions on G3 currencies move around the times of interventions on the JPY/USD exchange rate? by O. Castrén, November 2004.

411 "Fiscal discipline and the cost of public debt service: some estimates for OECD countries" by S. Ardagna, F. Caselli and T. Lane, November 2004.

412 "The real effects of money growth in dynamic general equilibrium" by L. Graham and D. J. Snower, November 2004.

413 "An empirical analysis of price setting behaviour in the Netherlands in the period 1998-2003 using micro data" by N. Jonker, C. Folkertsma and H. Blijenberg, November 2004.

414 "Inflation persistence in the European Union, the euro area, and the United States" by G. Gadzinski and F. Orlandi, November 2004.

415 "How persistent is disaggregate inflation? An analysis across EU15 countries and HICP sub-indices" by P. Lünnemann and T. Y. Mathä, November 2004.

416 "Price setting behaviour in Spain: stylised facts using consumer price micro data" by L. J. Álvarez and I. Hernando, November 2004.

417 "Staggered price contracts and inflation persistence: some general results" by K. Whelan, November 2004.

418 "Identifying the influences of nominal and real rigidities in aggregate price-setting behavior" by G. Coenen and A. T. Levin, November 2004.

419 "The design of fiscal rules and forms of governance in European Union countries" by M. Hallerberg, R. Strauch and J. von Hagen, December 2004.

420 "On prosperity and posterity: the need for fiscal discipline in a monetary union" by C. Detken, V. Gaspar and B. Winkler, December 2004.

421 "EU fiscal rules: issues and lessons from political economy" by L. Schuknecht, December 2004.

422 "What determines fiscal balances? An empirical investigation in determinants of changes in OECD budget balances" by M. Tujula and G. Wolswijk, December 2004.

423 "Price setting in France: new evidence from survey data" by C. Loupias and R. Ricart, December 2004.

424 "An empirical study of liquidity and information effects of order flow on exchange rates" by F. Breedon and P. Vitale, December 2004.

425 "Geographic versus industry diversification: constraints matter" by P. Ehling and S. B. Ramos, January 2005.

426 "Security fungibility and the cost of capital: evidence from global bonds" by D. P. Miller and J. J. Puthenpurackal, January 2005.

427 "Interlinking securities settlement systems: a strategic commitment?" by K. Kauko, January 2005.

428 "Who benefits from IPO underpricing? Evidence form hybrid bookbuilding offerings" by V. Pons-Sanz, January 2005.

429 "Cross-border diversification in bank asset portfolios" by C. M. Buch, J. C. Driscoll and C. Ostergaard, January 2005.

430 "Public policy and the creation of active venture capital markets" by M. Da Rin, G. Nicodano and A. Sembenelli, January 2005.

431 "Regulation of multinational banks: a theoretical inquiry" by G. Calzolari and G. Loranth, January 2005.

432 "Trading european sovereign bonds: the microstructure of the MTS trading platforms" by Y. C. Cheung, F. de Jong and B. Rindi, January 2005.

433 "Implementing the stability and growth pact: enforcement and procedural flexibility" by R. M. W. J. Beetsma and X. Debrun, January 2005.

434 "Interest rates and output in the long-run" by Y. Aksoy and M. A. León-Ledesma, January 2005.

435 "Reforming public expenditure in industrialised countries: are there trade-offs?" by L. Schuknecht and V. Tanzi, February 2005.