

# **The Growth Effects of Early Retirement**

A study of the Norwegian AFP-scheme

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## **Summary**

This paper tries to analyse the effect of the AFP early retirement scheme on economic growth in Norway. This scheme affects growth through three forces: The productivity-effect, the erosion effect, and the cost effect. We show that the AFP-scheme might be bad for growth, and try to explain why it nevertheless continues to exist.

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# 1 Introduction

Pensions have for many years been viewed as a 'right to a worthy end of life' for elderly worn down by years of labour. Lately, with increasingly differentiated jobs, the notion of this worthy end has led to the development of early retirement schemes, such as the Norwegian AFP-scheme<sup>1</sup>. This is an important part of the Norwegian retirement system: according to Holmøy (2002), more than 50 000 people will be retired through this scheme by 2010. The idea is to give those with the hardest jobs, often those who have the lowest productivity, a possibility to retire earlier, and enjoy their life as pensioners. This paper will investigate the effect that this program has on economic growth.

It is important to mention that the debate around the AFP-scheme in Norway has been one of redistribution, not of economic growth. This is purely a theoretical exercise to see if the AFP-scheme is expected to positively or negatively affect growth.

## 1.1 Overview

In this paper, we will try to map the effects of the AFP scheme on growth via three theoretical effects. First we will focus on the 'productivity effect' of the AFP-scheme, does it remove inefficient workers and thereby help the general economy? Second, we focus on the 'erosion effect'. Does economic growth through technological development force the elderly workers into early retirement? This would be contrary to the usual theory of early retirement affecting economic growth. If so, is the AFP-scheme simply a way to alleviate the pain? Third, we will focus on the tax effect. In the AFP-program, about 40% of the AFP pension is paid through taxes. Does this "taxing the many to help the few" hurt the economy in general?

## 1.2 Why is this interesting?

There has been quite a lot of research on both early retirement schemes in general, and the AFP scheme in particular, earlier. Further, several authors have investigated the link between pension schemes and growth.

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<sup>1</sup>Avtalefestet pensjon, a early retirement scheme based on an agreement between the labour unions and the employers organisation.

The research, from Lazear (1979) via Sala-I-Martin (1996) and onwards, has found that pensions could be beneficial for economic growth, given certain assumptions. Most important of those, removing the least productive in the workforce, replacing them with more productive workers (Sala-I-Martin 1996).

Much of the discourse around the AFP goes to the scheme not being targeted well enough. This article will try to investigate whether the AFP-scheme promotes economic growth. It may be an important element in the continuing political and academic debate surrounding the proper handling of the long term demographic changes.

## **2 Productivity-effect**

One main driver of economic growth is improved productivity. In an increasingly service-based economy, that means increasing labour productivity.

How does the AFP-program affect the labour market? Bratberg, et al. (2004) investigate the effects of the AFP-program in Norway, they

demonstrate that i) economic incentives influence the retirement decision, ii) there is a significant net induced retirement effect, iii) by a conservative judgement, at least 50% of the AFP retirees would have stayed in the labour force without the scheme (Bratberg et al. 2004, 387).

The AFP-scheme clearly affects retirement decisions. The remainder of this paper will be used to investigate whether or not it does so in a fashion that hinders economic growth.

### **2.1 Who 'should' retire?**

In a growth perspective, retiring the less productive to make room for the more productive through an AFP-type scheme, requires two strong assumptions. First, it requires that there is available labour in the economy. Although one can argue that business cycles has depleted the Norwegian labour supply recently, based on the theory of long term equilibrium unemployment, it is not a stretch to argue that, in general, there are available workers (Phelps 1967).

Second, and more important, it requires that the labour replacing the early retirees is more productive than those being replaced. It is not irrelevant who retires, why they retire, and what they do when they retire (Sala-I-Martin 1996).

The general assumption is a downgrading of productivity with age after a certain age (Lazear 1979), but Lazear does not agree with this. He claims that, even in the presence of this downgrading of productivity, based on the "diversity of talent" (Lazear 1979, 1262) in the labour force, all levels of productivity can be found in all cohorts. If this is the case, one could potentially make the economy more efficient by removing the least efficient from the workforce before a mandatory retirement age, for instance through an early retirement scheme.

## 2.2 Empirical study

According to Ball & Moffitt (2001), "[it] is clear that real wages are tied closely to labor productivity in the long run" (Ball & Moffitt 2001, 3). Therefore, the simplest way of measuring labour productivity is through nominal wages. In a perfectly stylized example, each worker would have a marginal income equal to the marginal productivity. This is, of course, not the way the world works, but it is a good foundation for building an empirical measure of productivity.

In the Scandinavian countries, and perhaps especially in Norway, centralised wage negotiations are heavily utilized. Therefore, each sector's wages mirror not individual, but collective productivity. However, the main point remains: If AFP is to increase economic growth, we should see a large move from low-paying jobs into the AFP-scheme.

Also, one must consider the 'Denison-effect', stating that "the movement from low-productivity-level [industry] to high-productivity-level industry would raise productivity even if the productivity growth rates in the two industries were the same" (Nordhaus 2001). Assuming a general downgrading of productivity with age<sup>2</sup>, and using the Denison-effect, one wants to see a higher degree of AFP-driven retirement in sectors with a large percentage of elderly, assumed to be a less productive sector.

The interesting question to ask is this: *Is it the workers of lowest productivity who take early retirement through the AFP-scheme?*

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<sup>2</sup>As one has to be age 62-67 to be eligible for the AFP-scheme, it is fair to assume that the peak productivity has passed for most workers.

### 2.3 Analysis

By using a simple regression model on data from Statistics Norway and NAV<sup>3</sup>, we tried to find if in fact the lowest paid are the ones to use the AFP-system. Without going too much into the details, we decided against using a general growth model to investigate the impact on economic growth, for three main reasons. First, there are too many variables that affect economic growth, amongst which early retirement is only a very small part. Secondly, the lack of viable comparable data across countries or time. Finally, such an analysis, although possible, would have too wide a scope and be a much more technical paper than this one aims to be.

In our analysis, we looked at the share of workers in the eligible age who started participating in the AFP-scheme (new entrants) in 2003-2007 against the salaries for both fully and partially employed and share of workers above age 60, controlling for gender, time and share of part time employees in the sector. These numbers are sector based, and can only give hints towards a general pattern. To map variations within a sector, further and more detailed study is required.

Dependent Variable: New entries to the AFP-scheme,  
2003-2006, share of employees age 62-66

	$\hat{\beta}$	Std. Error	t	Sig.
(Constant)	-2757.12	1013.95	-2.72	0.008
Gender*	6.45	1.978	3.26	0.001
Year	1.39	0.507	2.75	0.007
Share part-time	-32.92	5.640	-5.84	0.000
Av. wage part-time	0.00088	0.00027	3.25	0.002
Av. wage full-time	-0.00057	0.00019	-2.96	0.004
Share age 60+	69.44	28.198	2.46	0.015
Wage age 60+**	-23.45	8.573	-2.74	0.007
$R^2$	0.579			

\* Dummy, women = 1

\*\* Share of average sector wage.

<sup>3</sup>The Norwegian Labour and Welfare Administration

## Wages

For the fully employed, there seems to be the expected effect. The less money one makes, the more likely it is that one retires early. Granted, the effect is comparatively small, but none the less significant<sup>4</sup>. It seems, at least at first glance, that the AFP-scheme is good for growth, following the theoretical arguments. The wage-effect for the fully employed is reflected and amplified, it seems, in the wages for the group age 60+. Following the logic of alternative costs, the more you earn compared with the rest of the sector, the less likely you are to retire early.

Interestingly, for the partially employed, wage seems to have the opposite effect on early retirement than for the fully employed. Although this result is counter to the growth argument, it is no surprise. One of the main critiques of the AFP-scheme from a redistribution stand, is that it is the well off who can afford to take the reduction in income following early retirement.

## Demographics

The productivity effect is a direct effect on economic growth. There are, however, also effects through demographics, the above-mentioned Denison-effect.

From the analysis, it is clear that workers in sectors with a higher share of elderly workers also have a higher chance of going into early retirement through the AFP-plan. These effects appear to be strong and statistically significant,<sup>5</sup> and are in accordance with increased growth through the Denison-effect.

If we study the data a bit closer, the sectors with a high percentage of elderly, the education and governmental sectors, are highly labour intensive, but not necessarily human capital intensive. The highest growth is expected in the capital intensive sectors, such as oil and gas and the industrial sectors, and the human capital intensive sectors, such as financial and business services (Nordhaus 2001), all with lower percentage of elderly.

Since there is a clear correlation between the low productivity sectors and the number of AFP retirees, this should have a positive effect on growth through the rebalancing of labour from low to high productivity sectors

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<sup>4</sup>Statistically significant within  $\alpha = .01$

<sup>5</sup>Statistically significant within  $\alpha = .05$

### **Effect on growth**

First, the best off, the fully employed elderly with high wages, seems to use the AFP scheme less than others. This could be the result of high alternative costs of retirement, and allows workers in less productive sectors to retire early.

Second, the displacement of elderly from the low-productivity sectors should lead to an economy with higher productivity.

From a growth perspective these patterns are interesting. It seems the AFP-scheme theoretically could help growth, if the emerging patterns in fact reflect the situation. At the same time it could be a problem that sectors with high part time employment has less early retirement.

It seems the AFP-scheme does not remove the least efficient, but the middle of the pack. Combined with the findings of Bratberg et al. (2004) and Røed & Haugen (2003), who claim that half and two thirds of the retirees, respectively, would have stayed in full employment until age 67, this could be a negative force on economic growth.

## **3 Erosion-effect**

As with so many things in macroeconomics, there are causality problems in the relationship between early retirement and growth. Not only is growth caused by an almost infinite array of variables, but high economic growth can also lead to increased early retirement.

Technological development is often used as a black-box term for explaining continuous economic growth. In growth models, it is often just set as a parameter  $\theta$ , without any further explanation. However, for our purposes, this technological development has a very concrete significance. New technology for our purposes is the entry of new, more efficient machines, computerisation of processes, and access to advanced tools requiring a high degree of training. As Ahituv & Zeira (2000) show, older workers may have problems keeping up and simply become outdated due to this new technology entering the market.

### **3.1 Who retires and why?**

Ahituv & Zeira put the "erosion-effect" up against a "wage-effect" (Ahituv & Zeira

2000, 2). These two effects address an important trade-off. Firstly, as mentioned, the new technology makes older workers less efficient. Instead of being laid off, they have the possibility of early retirement, thus creating an 'erosion' of elderly workers. In sectors with rapid technological improvement and increasing productivity demands, one expects to see such an effect.

However, in the rapidly developing sectors, the technology also makes each worker more efficient, and there may be a steep increase in wages. This 'wage effect' should, in periods of rapid growth, lead to workers wanting to stay in their jobs, thus leading to low early retirement numbers due to higher wages and higher 'costs'<sup>6</sup> of retiring.

In a stylized model, a strong erosion effect could show itself in a greater unemployment rate among elderly workers. However, with strong employment protection, this effect is likely to diminish. In order for business to move on technologically, the workers, the employers and the government may join together to develop an early retirement scheme like the AFP-scheme, where costly retirements of inefficient workers may be paid for, in part, by the state.

Much of the effect of the AFP-scheme in this case, becomes a way of greasing the gears of growth rather than a way of directly affecting growth. The key is increased growth through fiscal stability and predictability.

The Nordic model has been praised for the fact that its fall back mechanisms, liberal markets and generous unemployment benefits has created a less risk averse business environment. The AFP-scheme can certainly be included in such an argument, as it may be well fitted to handle the erosion effect, without distorting the positive sides of the wage effect.

Again, the question we pose, is this: *Is it the least efficient who retire early through the AFP-scheme?*

### **3.2 Empirical study**

In predicting sector differences under the erosion effect, one must consider both the erosion and the wage-effects. In our data, the sector differences are quite substantial.

In sectors where the erosion effect is stronger, we expect to see a larger share of early retirees, a lower share of older workers, and lower increase in wages. As

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<sup>6</sup>Costs in the sense of alternative costs.

mentioned above, it is in the technological and human capital intensive sectors we expect to see the erosion effect being strongest.

In more traditional capital intensive sectors like heavy industry, construction and petroleum extraction, one expects the wage-effect to be stronger. Each unit of capital improves the individual worker's productivity, but without having to replace the older workers at as high a rate. Empirically, we expect to see a steeper incline in wages for the elderly workers and a lower rate of early retirement.

When investigating the data, it seems that sectors with expected high human capital also has a high wage level for the elderly workers, however, the expectation of variation in share of elderly workers seem less clear. There is a small positive correlation<sup>7</sup> between share of elderly workers and wage level compared to the rest of the sector, supporting the erosion effect at least to a certain degree, and strengthening the hypothesis of Ahituv & Zeira (2000).

It seems unclear whether these effects lead to least productive workers retiring.

## 4 Cost-effect

So far we have discussed the effects of elderly workers leaving the labour market, but said little of the costs involved in early retirement policies. The AFP-scheme is partly paid for by the employers, and partly paid for by the government, using taxes.

If more people retire early, and thus are supported by transfers from the state, less people are left to pay the bill. A steep increase in taxes to pay for this retirement can have devastating effects on the economy, both through the distorting effects on incentives to work and the lowered available income for consumption. In addition, according to Conde-Ruiz & Galasso (2004), "early retirement [...] has negative, long-lasting effects on the growth of the economy, [and] the tax bill of all future workers increases" (1850).

To show the effects of early retirement, Conde-Ruiz & Galasso (2004) lays out a intergenerational macroeconomic model with human capital and growth. They argue that providing early retirement schemes both "reduces the incentives to accumulate human capital, [and] shifts part of the increase in the tax burden on future generations" (Conde-Ruiz & Galasso 2004, 1867). This leads to lower economic growth both now and in the future.

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<sup>7</sup>Correlation of 0.19

Lindbeck (2003) argues that the generous welfare state cannot afford maintaining a costly pension-scheme through unfavorable shocks such as demographic changes or slower productivity growth. A widening of the pension-base and a shrinking of the tax-base may be just the shock he refers to.

These effects have a clearly degrading effect on economic growth.

## 5 Why do we do it?

What all of the effects we have mentioned show, is that early retirement can both have a positive and a negative effect on growth. The problem, however, is that in order for there to be a positive effect a very select few have to be the retirees, while younger more productive workers replace them. Total labour productivity has to be increased.

On the other hand, in order to have a negative impact on growth, it is a much broader section of the public who can retire. In addition, the costs will always pull in the negative direction, meaning that any productivity growth has to outweigh the costs as well. Our data are ambivalent in supporting the positive growth hypothesis, and the question becomes whether any positive effects outweigh the cost-effects. We would argue that this is unlikely.

So why do we offer a policy that is so unclear when it comes to economic growth in a time with unprecedented focus on economic policies? We believe there are two reasons. Firstly, there is a misconception among the 'hardest working' that the AFP-scheme will benefit them greatly, and together with those who actually gain from the AFP-scheme, there are enough proponents to gain political support.

Secondly, the labour unions are losing their foothold in the Norwegian public, and want to use the AFP-scheme as a recruitment tool.

### 5.1 Political support

The AFP-scheme, as it is supported by the government, has severe political implications. It has got strong support in the people, even though we have shown that it may be too blunt of an instrument. Why is this?

### **Path dependencies**

Often, there is a clear connection between the current state and which reforms are chosen by a society. In fact, one may choose policies, as in this case, that may be known to be harmful in the long run based on the previous choices we have made (Liebowitz & Margolis 1995). It is like when you are walking in the woods, even when you know you are following the wrong path, changing path may be costly, or even just perceived to be costly, thus keeping you from changing to what you know would be a better path for where you are going.

In the same way, a pension system may be explained by path dependence. James & Brooks (2003) argue that the political compromises a government has to make in order to come to or stay in power, is directly linked to the willingness to promote pension reforms, and "legacies from past systems become incentives or constraints on design possibilities for new systems" (James & Brooks 2003, 4).

In the Norwegian system, the path dependence argument seems to fit quite well. The AFP-scheme, and especially the before mentioned arguments in favour of it, are clearly in the line with the legacies of the past. As the social democratic policies of post-war Norway has created a sense of paternalism based on taking care of the weakest, it is understandable that there is wide support for such a system. Even if it is shown to not be efficient and to be counterproductive to growth, it is perceived to be good and fair redistribution policy to support an AFP-scheme (Skjeseth & Nielsen 2008).

However, there is one quite interesting detail. If the policies were to follow the traditional Norwegian pattern, participation in the AFP-scheme would only require citizenship. That may be a reason why there is so much debate around the AFP-scheme. If it had been offered to everyone, the debate could have been less dominating in the media.

### **Several beneficiaries**

Conde-Ruiz & Galasso (2004) have an interesting theory on why there may be wide political support for early retirement, although it may be harmful in the long run. In their game theoretical set-up, they show that while old voters may support an early retirement for purely selfish reasons, even young voters may be willing to pay for the early retirement of the old. Especially if they view the benefits as intergenerational,

thus benefiting themselves later in life. This is a common theory in the academic work on social security (Conde-Ruiz & Galasso 2004, Tabellini 2000).

They argue that in order for an early retirement provision to come to life and be sustained, a large benefit for the young has to happen through removal of elderly. This would make room for the young in the labour market, leading to redistributive effects among the low-income groups (Conde-Ruiz & Galasso 2004).

Interestingly, our analysis tells another story as well. In addition to the low-income supporting the AFP-scheme, it seems it is the middle-to-high income bracket who gain the most from having the AFP-scheme. They are the ones to use the early retirement option in the scheme the most.

Thus, both low income and high income are likely to support such a scheme. It seems clear that there is support for such a scheme in many layers of society.

## 5.2 Labour Unions

Is it really the people who decide the policies though? One of the key components of the AFP-scheme, in the private sphere, is that it only covers companies who are part of the centralised wage negotiations. In other words, it covers most employees who are members of the labour unions.

According to Selle & Østerud (2006), the labour movement has traditionally had a close connection to the political players in Norway. However, they argue that the traditional corporatist structure is in retreat in Norway, with the labour unions losing much of their power.

Could the way the unions have set up the AFP-scheme act as a recruitment tactic? Media commentator Elin Ørjasæter (2008) seems to believe so, and the labour unions seem willing to sacrifice a lot in order to renew the AFP-scheme in the 2008 negotiations (NTB 2008).

As we mentioned above, this does not seem to follow in the tradition of the Norwegian welfare state, where the focus on rights for everyone has been a central one. However, labour unions are needed in the election campaign for the 'left' side (Skjeseth & Nielsen 2008), and has traditionally had a strong connection to the Norwegian Labour Party, currently in government. It seems a reasonable plan from the stand of the labour unions, but does it actually work?

### **It is working**

Although it is hard to link long term increasing membership numbers in the labour unions to a single cause, generally it seems membership in the labour unions is increasing (ssb.no 2006). There has several years in a row been a steady increase in the number of organised workers in Norway.

Also, AFP specifically actually seems to be working as a recruitment tool. After the renewal of the AFP-scheme in 2008, there has been a flow of new members in the Norwegian Union of Commercial and office employees (Nygaard 2008), and when the numbers for 2008 come, it will be interesting to see whether the increase has been significantly larger than other years because of the focus on the AFP-scheme in the media or elsewhere.

### **5.3 Will we continue?**

As mentioned earlier, although the unions seem to gain in numbers, research shows they seem to lose political power (Selle & Østerud 2006). The question becomes, can the politicians risk an early retirement scheme so opposed to growth, just to appease the labour unions? It is very hard to predict, but if we believe the path dependency argument along with the spread in beneficiaries and that the unions' gain from it, it is hard to imagine any real change in the scheme now that it is implemented and has lasted for so long. The most likely change is that it will be widened to encompass more people, something that may be even more counter to growth than it already is.

## **6 Conclusion**

In this paper we used data from NAV and Statistics Norway to try to predict the effect of the AFP early retirement scheme on economic growth. The data is sector level data, separated into age groups, gender and employment status. Ideally we would have individual level data, which would make the analysis much more detailed and interesting.

Using straightforward statistical methods, like regression analysis, we analysed the data giving us a series of interesting results. Again, using individual level data, we could have tried to make a predictive model to better analyse the situation.

## Findings

We showed that the AFP-scheme in total seems counter to growth through the three effects, the productivity effect, the erosion effect and the cost effect. Using the current theory, we tried to insert the statistical results into the theory to show that the AFP-scheme has potential to growth, but that it is not precise enough. According to the traditional theory, the 'wrong' people retire early, or more precisely: the wrong sectors have the most people taking the AFP-scheme early retirement.

Afterwards we showed that the support for the AFP-scheme is strong, and that the scheme may be difficult to change.

## What now?

There are mainly two ways of continuing on our little project. First, it would be very interesting to repeat our study, using individual level data. It would to a much greater degree tell us if the people retiring are in fact the 'hardest' working individuals within each sector, even though it may not be the 'hardest' working sectors who are in majority.

Second, it would be interesting to expand the research in time and space to compare timeseries from Norway to other countries to see if there is a general trend or if there are clear differences in each scheme over time.

It may also be interesting to see if the changing relationship between the labour unions and the government will have an effect on the provision of AFP.

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