

Public Pension Policy and Fiscal Foresight: Narrative Evidence and Aggregate Implications

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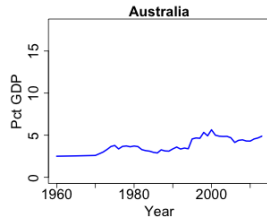
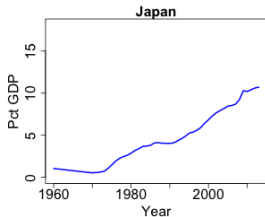
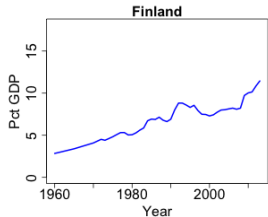
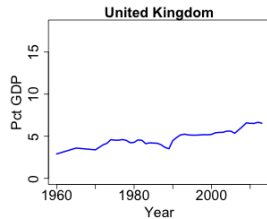
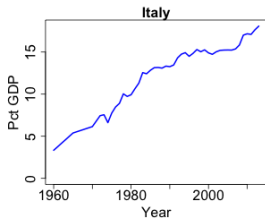
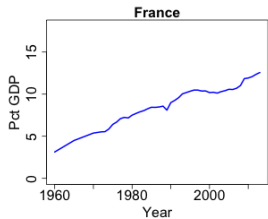
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The views expressed in this paper are those of the authors and not of the Federal Reserve Bank of Kansas City, or the Federal Reserve System.

Trend in Public Pension Spending

- ▶ Pension spending has been rising across countries, even though the pace varies.



Call for Pension Retrenchments

- ▶ Pension retrenchments are necessary...

The
Economist

Today

Weekly edition

Menu



Leaders

Apr 7th 2011 edition >

Pensions

70 or bust!

Current plans to raise the retirement age are not bold enough

PUT aside the cruise brochures and let the garden retain that natural look for a few more years. Demography and declining investment returns are conspiring to keep you at your desk far longer than you ever expected.

Call for Pension Retrenchments

- ▶ ... but they are politically challenging.

The Economist

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Europe

Jun 15th 2019 edition >

Macron, Act II

France's president kicks off a second round of reforms

The civil service, welfare and pensions will all be shaken up

This Paper

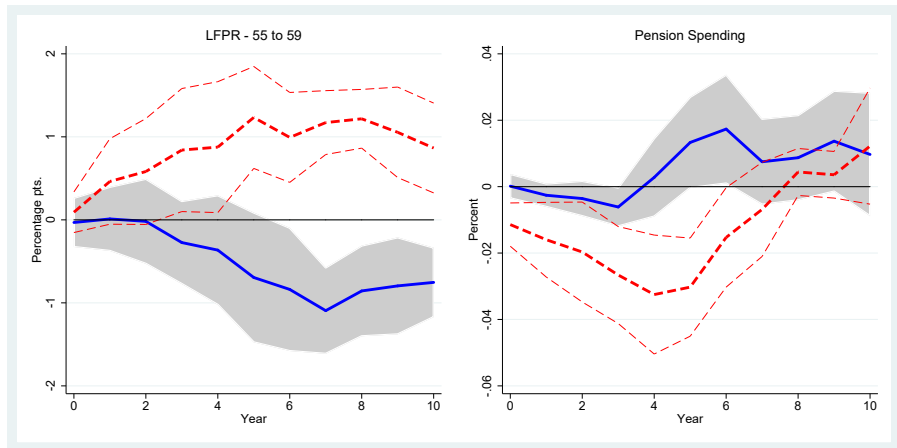
- ▶ Questions:
 - ▶ What kind of changes in pension policy contributed to the rapid rise in pension spending?
 - ▶ How do structural pension reforms impact the macroeconomy?
- ▶ Outline:
 - ▶ Narrative evidence:
 - ▶ Document chronological changes in pension policy for 10 OECD countries between 1962-2017.
 - ▶ Empirical analysis:
 - ▶ Use local projection method to estimate the impact of structural pension reforms on macro variables.

Findings

- ▶ Changes in pension policy come in waves.
 - ▶ Pension expansions between 1960s-80s followed by structural retrenchments since 1990s.
 - ▶ Retrenchments come with prolonged implementation delays.
- ▶ The impact of structural retrenchments depends on fiscal foresight:
 - ▶ No delay:
 - ▶ Population close to retirement age stays in the labor force longer, leading to a **decline in pension spending**.
 - ▶ With implementation delay:
 - ▶ The marginal group exit from the labor market earlier, leading to a **rise in pension spending over medium term**.
 - ▶ The impact on GDP hinges on the credibility of pension reforms.

Key Results

- ▶ Structural reforms: no delay (red) vs. delay (blue)



Data Set Compilation

Narrative Approach

- ▶ Document changes in public pension policy for 10 OECD countries (1962-2017):
 - ▶ Belgium, Denmark, Finland, France, Italy, Spain, United Kingdom
 - ▶ Australia, Japan, New Zealand
- ▶ Data source:
 - ▶ Annual/bi-annual OECD Economic Survey for each country
 - ▶ Supplement legislative documents from country-specific sources
 - ▶ NBER series on social security programs and retirement around the world

Narrative Approach

- ▶ Record: sign / policy tool / motivation / implementation lag
 - ▶ Sign: expansion / retrenchment
 - ▶ Policy tools:
 - ▶ Coverage: the # of service years or related to means or asset tests [ex: Belgium (2006), Australia (1975)]
 - ▶ Benefit formulas: changes in payments or payment calculation formula [ex: Japan (1972), France (1993)]
 - ▶ Indexation: indexing to wages/prices [ex: Italy (1992), UK (2010)]
 - ▶ Eligible retirement age [ex: Spain (2011), Finland (2017)]

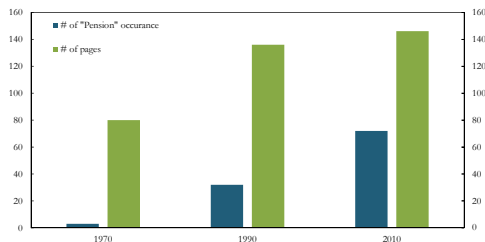
▶ Examples

Narrative Approach

- ▶ Record: sign / policy tool / motivation / implementation lag
 - ▶ Motivations: Romer and Romer (2010)
 - ▶ Cyclical: stimulate the economy and promote short-run growth [ex: Belgium (1975-78)]
 - ▶ Purchasing power: maintain or improve purchasing power of retirees [ex: Japan (1974)]
 - ▶ Structural: address long-run issues
 - ▶ Implementation lags
 - ▶ Between when a policy change is enacted and when it is fully phased in.

OECD Economic Surveys

- ▶ The discussion devoted to pension policy in the Survey has increased over time.



- ▶ The format of the Survey has changed over time:
 - ▶ Prior to 1973: general discussion on fiscal policy
 - ▶ 1973-2002: chronology of major economic policy events
 - ▶ Since 2003: in-depth discussion on economic challenges and policy recommendations

OECD Economic Survey (Prior to 1973)

- ▶ Example: Belgium (1970), expansion/payment/cyclical/no lag

III ECONOMIC POLICIES IN BELGIUM

Economic policies seem to have had some stabilizing effect on demand during the phase of recovery of economic expansion in 1968, and perhaps during last year's boom. In the former year, there had been a certain conflict between internal and external aims, with the expansionary policies adopted to support domestic demand contributing to the heavy, largely speculative, capital outflows. The conflict was removed last year, when internal as well as external considerations called for a shift to more restrictive policies. It is not possible to know precisely the role played by policy action, as distinct from autonomous factors, in strengthening demand during 1968 and containing last year's boom, and the stabilizing effect of individual policies is difficult to judge. The policy mix relied on monetary and budgetary instruments in both periods, but with the adjustments in response to the changing circumstances affected more promptly in the monetary field than in that of the budget.

The expansionary policy phase had started with an active easing of monetary conditions from early in 1967 on. Early in 1968, then this had not yet succeeded in coping with the slack in fixed investment, and external influences made it technically difficult to pursue a policy of active monetary easing, expansionary fiscal action was taken. For this, the authorities relied on measures, such as public works, aid for dwellings and increased pension payments, which could be expected to involve a relatively small import leakage and quite strong employment and income effects. Combined with the continued easy posture of monetary policy, this was followed later in the year by the beginning of a revival of fixed investment. It is true, of course, that the revival was importantly influenced by autonomous factors as well, in particular, the continued buoyancy of exports, rising capacity utilization in industry and a marked improvement of business profit.

OECD Economic Survey (1973-2002)

► Example: Belgium (1994), expansion/age/cyclical/no lag

Annex

Calendar of main economic events

BELGIUM

1994

January

The standard VAT rate is increased from 19.5 per cent to 20.5 per cent.
The National Bank of Belgium cuts its central rate in three stages to 6.85 per cent.
Financial intermediaries approved by one EU country are allowed to become members of the Belgian Futures and Options Exchange.

February

The National Bank of Belgium cuts its central rate in three stages to 6.4 per cent.

March

The social partners in the Central Economic Council fail to reach unanimous conclusions about Belgium's competitiveness. The trade unions conclude that the statistical information is insufficient to assess the competitive position, while employers' organisations argue that competitiveness has only been stabilised by the measures in the global plan and ask for further measures.

The National Bank of Belgium cuts its central rate three times to 6.05 per cent.

April

Employers' contributions on low salaries have been reduced, resulting in a 10 per cent reduction in labour costs for low-skilled workers.

The National Bank of Belgium cuts its central rate in four stages to 5.6 per cent.

May

The National Bank of Belgium cuts its central rate in four stages to 5.25 per cent.

June

The Finance Minister announces the introduction of a new clearing system enabling private retail investors to hold, in a special account, government Treasury bills and linear bonds (OLOs) a facility previously available only to banks and institutional investors.

The National Bank of Belgium cuts its central rate in five stages to 4.95 per cent.

July

The Government presents the 1995 Budget. Federal government spending is projected to decline by 1.6 per cent in real terms. The Budget aims to reduce the general government deficit to 4.3 per cent of GDP, in accordance with the Convergence Plan.

The federal government reaches agreement with the governments of communities and regions on the targets in the convergence plan.

The National Bank of Belgium cuts its central rate twice to 4.85 per cent.

September

The Government suggests an additional budgetary norm, requiring the primary surplus to remain above 6 per cent of GDP in the period beyond 1996.

December

An interprofessional agreement (*accord interprofessionnel*) is concluded for the period 1995-96. Social charges are reduced for enterprises which create additional jobs by reducing working hours and for the recruitment of long-term unemployed or receivers of minimum benefit. The age limit for early retirement is lowered to 55, subject to special conditions, for two years.

OECD Economic Survey (Since 2003)

- ▶ Example: Belgium (2017), retrenchment/age & coverage/structural/10-15 years

Box 3. Main elements of the 2015 pension reform

A number of measures were taken in 2015 to increase the effective average age of retirement from the labour market, thereby improving the sustainability of the pension system.

The statutory retirement age will be increased from 65 to 66 years in 2025 and to 67 years in 2030.

Early retirement conditions will be made more stringent.

- The minimum age and number of career years required to qualify for early retirement will progressively increase: starting from 62 years and 40 years respectively in 2016, they will increase to 62.5 and 41 years in 2017, then to 63 and 41 years in 2018 and finally to 63 and 42 years in 2019.
- Exceptions for long careers will also be tightened. The required career length to retire at 60 (61) will increase from 42 (41) years in 2016 to 43 (42) years in 2017 and 44 (43) years in 2019.
- In the civil servants scheme, the years of studies taken into account in the aforementioned career condition for early retirement will be progressively phased out as from 2016 (by steps of 4 to 6 months/year).

The terms for *pre-pension benefits* (unemployment benefits with employer top-up) have been made more stringent:

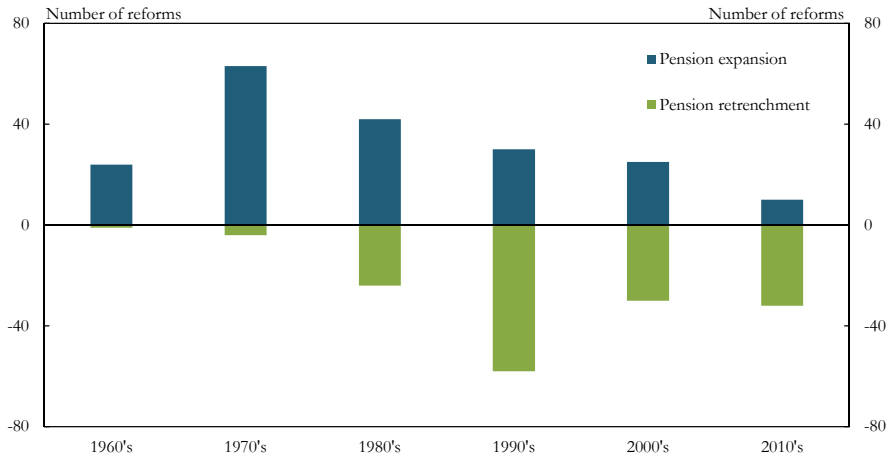
- The minimum age has been increased from 60 years to 62 years in 2015, subject to transitional arrangements.
- The age limit for pre-pension benefits for loss-making and restructuring companies is to increase from 55 years in 2015 to arrive at 60 years in 2020.
- The minimum age for pre-pension benefits after very long careers (40 years) has been increased from 56 years to 58 years in 2015.
- The minimum age for pre-pension benefits in case of night and shift work or incapacity to work in the building sector has been increased from 56 years to 58 years in 2015 and will be raised to 60 years on a date to be set by the National Labour Council.
- The minimum age for pre-pension benefits in case of arduous jobs will be raised to 60 years on a date to be set by the National Labour Council.

General Trends

- ▶ Question: What kind of changes in pension policy contributed to the rapid rise in pension spending?

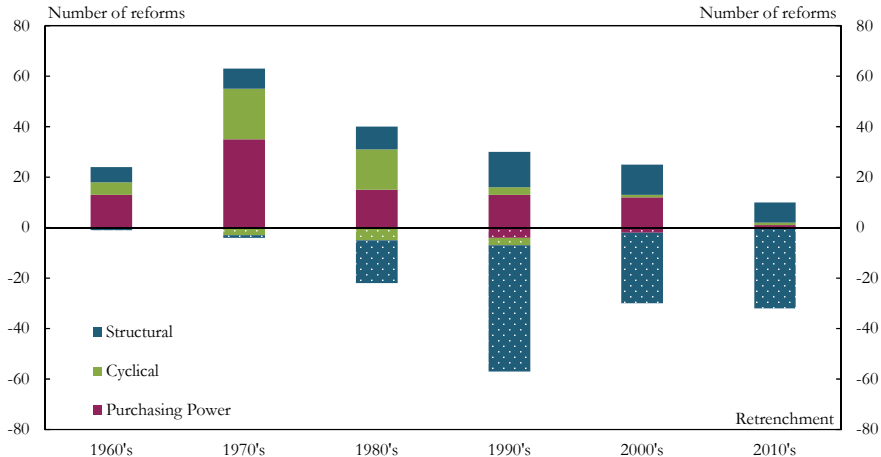
Pension Changes Come in Waves

- ▶ Expansions between 1960s and 80s followed by retrenchments since 1990s.



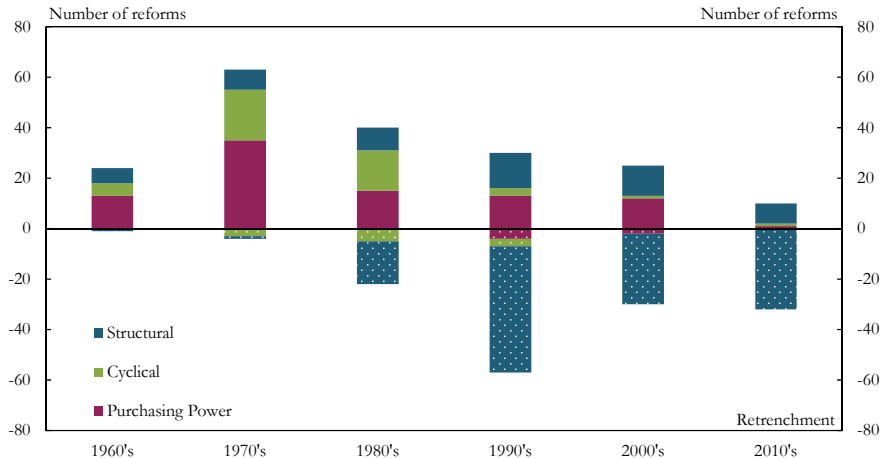
Pension Changes Come in Waves

- ▶ Early expansions driven by cyclical and purchasing power considerations.



Pension Changes Come in Waves

- ▶ Recent retrenchments since the 1990s have been dominated by structural reforms.



Empirical Analysis

- ▶ Question: How do *structural* pension reforms impact the labor market and the broad macroeconomy?

Empirical Analysis

- ▶ Narrative approach
 - ▶ Romer and Romer (2010)
 - ▶ Identification: structural reforms are motivated by long-run concerns.

- ▶ Fiscal foresight
 - ▶ Ramey (2011), Mertens and Ravn (2012), Leeper, Walker and Yang (2013)
 - ▶ Explore the impact associated with implementation delays

Structural Reform Measure with Intensity

▶ 2000 Reform in Japan

- ▶ Reduce EPI pension benefits. (-, no delay)
- ▶ Eliminate wage indexing of benefits. (-, no delay)
- ▶ Introduce a new earnings test for EPI pensioners. (-, no delay).
- ▶ Raise the minimum age to receive full EPI benefit from 60 to 65 years over a 12-year period starting in 2013. (-, delay)

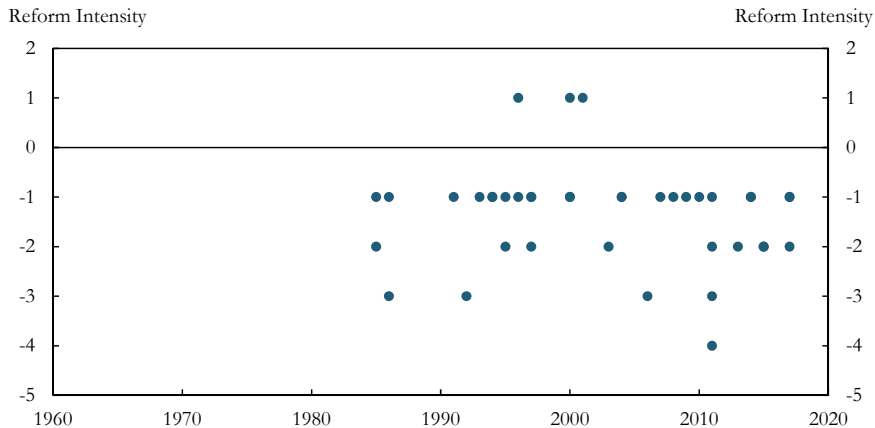
▶ 2007 Reform in United Kingdom

- ▶ Reduce # of years of contributions required for a full basic state pension. (+, no delay)
- ▶ Increase retirement age to 66, 67, and 68 respectively by mid 2026, 2036, and 2046. (-, delay)

Structural Reform Measure without Delays



Structural Reform Measure with Delays



Granger Causality Test

	Reform without lag	Reform with lag
LFPR (55-64)	0.92	0.76
Pension spending/GDP	0.48	0.29
GDP growth	0.55	0.80
Unemployment	0.70	0.56
Elderly population	0.77	0.27
Inflation	0.46	0.35
Deficit/GDP	0.38	0.22

Table: p-values for Granger causality tests.

- ▶ Regressions include one lag of the reform measure and the aggregate variable, and country and year fixed effects.

Empirical Framework

- ▶ Apply the local projection technique, Jordà (2005):

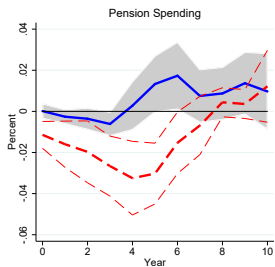
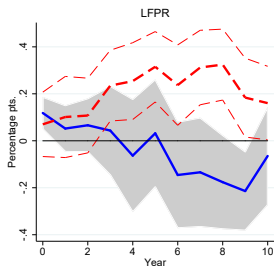
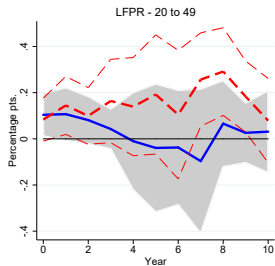
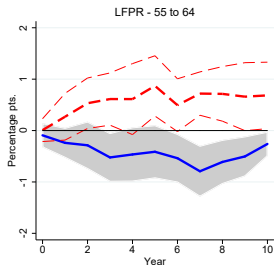
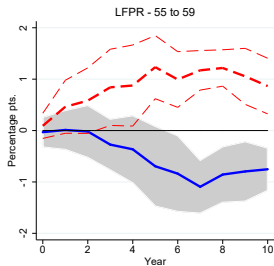
$$z_{i,t+h} = \alpha_{i,h} + \gamma_{t,h} + \beta_{n,h} R_{i,t}^{nodelay} + \beta_{d,h} R_{i,t}^{delay} + \sum_{j=1}^J \delta_{n,h}^k R_{i,t-j}^{nodelay} + \sum_{j=1}^J \delta_{d,h}^k R_{i,t-j}^{delay} + \sum_{j=1}^J \theta_h^k z_{i,t-j} + \varepsilon_{i,t+h}, \text{ for } h = 0, 1, 2, \dots$$

- ▶ z : macroeconomic variable of interest.
- ▶ R^{delay} , $R^{nodelay}$: pension reform measure with & without delay.
- ▶ α_i , γ_t : fixed effects.
- ▶ Data period: 1980 - 2017.
- ▶ Baseline: exclude Italy and Japan.

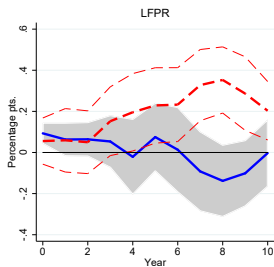
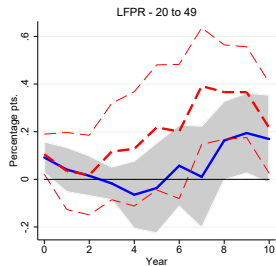
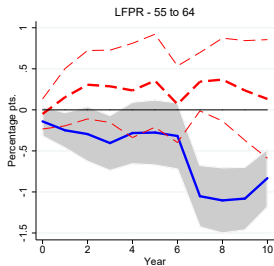
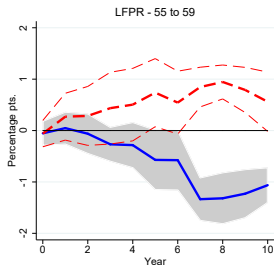
Empirical Analysis:

Impact on Labor Market

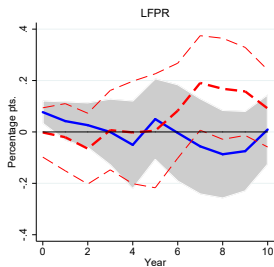
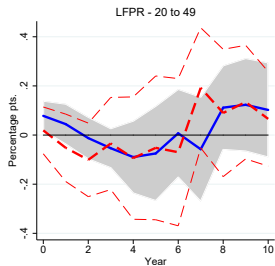
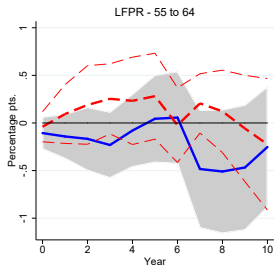
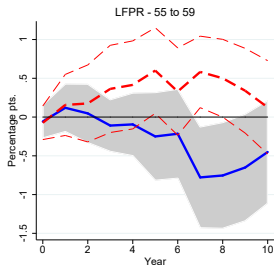
Retrenchments with (blue) vs. no (red) delays



Include Italy: with (blue) vs. no (red) delays



Include Italy and Japan: with (blue) vs. no (red) delays



Structural Reforms With and Without Delays

- ▶ Pension retrenchment reforms can have unintended consequence through fiscal foresight.
- ▶ No delay:
 - ▶ Population close to retirement stays in the labor force longer...
 - ▶ ... lead to a decline in pension spending.
- ▶ With delay:
 - ▶ Population close to retirement exits from the labor market earlier...
 - ▶ ... lead to a rise in pension spending over medium term.

Robustness Checks

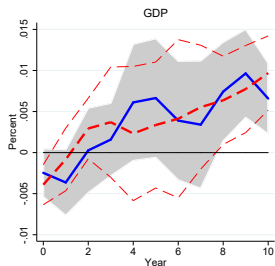
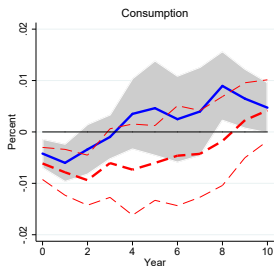
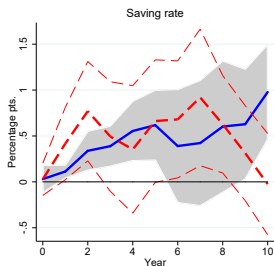
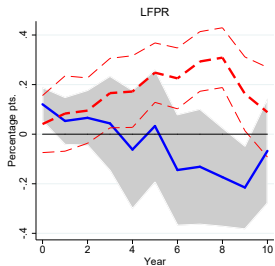
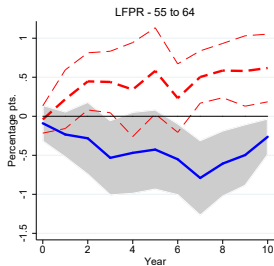
Our results for LFPR of older workers and pension spending are robust:

- ▶ Account for coincidence of other fiscal consolidation measures
 - ▶ Add lags of fiscal consolidation variable as a control (Guajardo, Leigh, and Pescatori (2014))
- ▶ Account for changing demographics
 - ▶ Add life expectancy and the share of elderly population.
- ▶ Use reform dummies without intensity
- ▶ Include both major and marginal changes in pension
- ▶ Separate female vs. male LFPRs
- ▶ Drop observations following the financial crisis

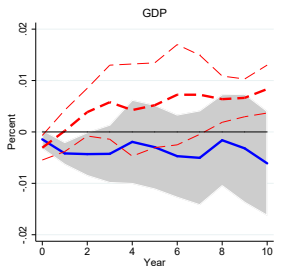
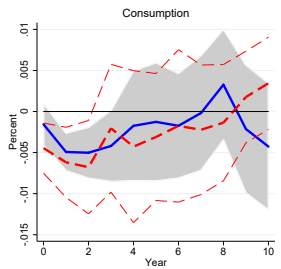
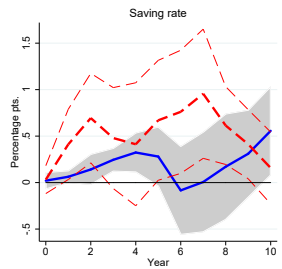
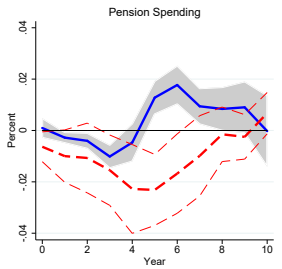
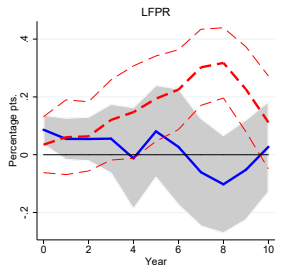
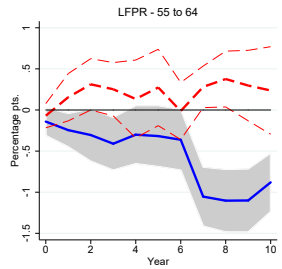
Empirical Analysis:

Impact on the Macroeconomy

Retrenchments with (blue) vs. no (red) Delays



Include Italy



Going Forward

- ▶ Expand the set of countries
- ▶ Exploit different policy tools: e.g. coverage vs. age
- ▶ Further extend empirical analysis: pension changes motivated by purchasing power [Romer and Romer (2016)]
- ▶ Bridge empirical findings with theoretical life-cycle literature
- ▶ Policy question: optimal implementation delays

Appendix

Distribution of Changes in Pension Policy

		Faster growth	Slower growth
	All Reforms	47.6	52.4
Motivation	Cyclical	40.9	59.1
	Purchasing power	45.7	54.3
	Structural	55.2	44.7

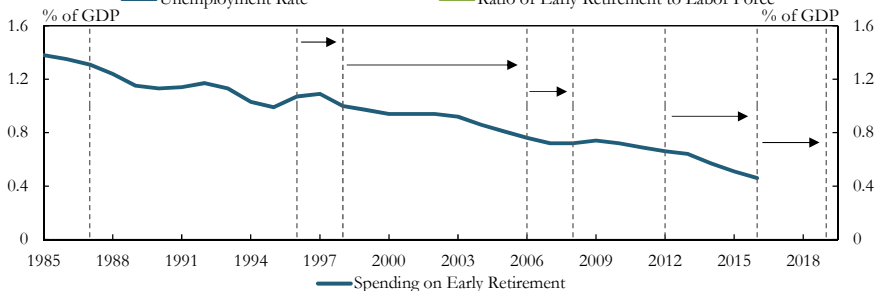
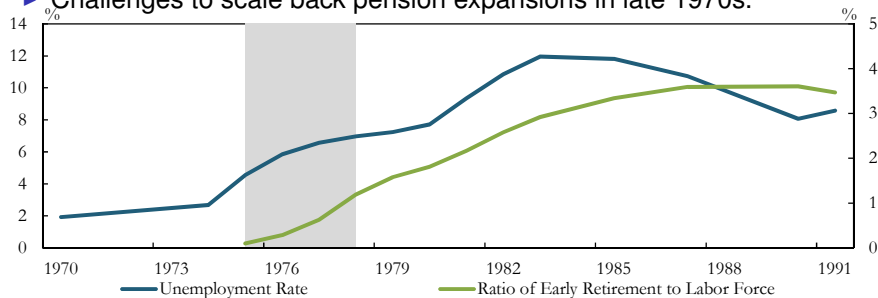
- ▶ Faster (slower) growth: real GDP growth exceeded (was below) the sample average growth rate.
- ▶ Cyclical/purchasing power: more likely during periods with slower growth.
- ▶ Structural: more likely during periods with faster growth.

Examples: Different types of policy changes

- ▶ **Coverage:** In 2006 Belgium raised # of service years from 25 to 30 (by 2008); in 1975 Australia dropped means testing for 70-74
- ▶ **Benefits:** In 1972 Japan increased payments from 2% to 3% of salary; in 1993 France, payments now calculated based on best 25 years of earnings, not 10 for private sector workers
- ▶ **Indexation:** In Italy 1992 indexing to price inflation with scope for additional indexation to real earnings; in 2010 UK imposed triple lock (by the greater of growth in prices, growth in earnings, or 2.5%)
- ▶ **Age:** In 2017 Finland gradually raised of the retirement age from 63 to 65 years by 2027; in 2011 Spain increased retirement age from 65 to 67 by 2027

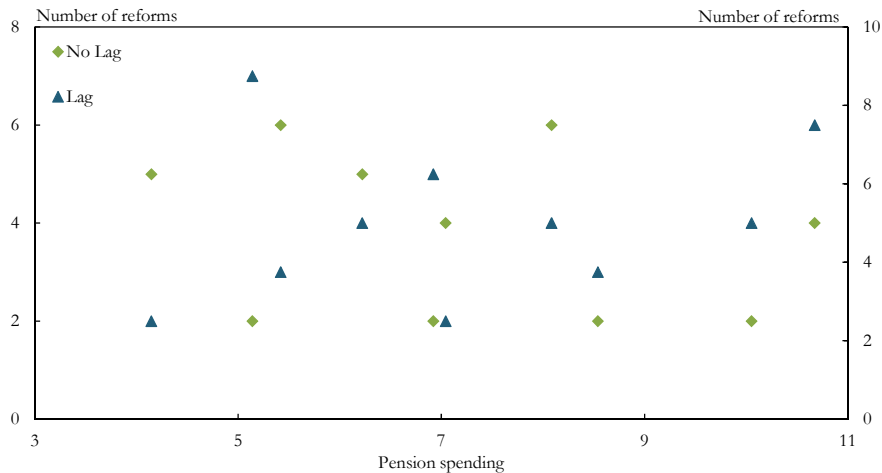
Case Study: Belgium

► Challenges to scale back pension expansions in late 1970s.



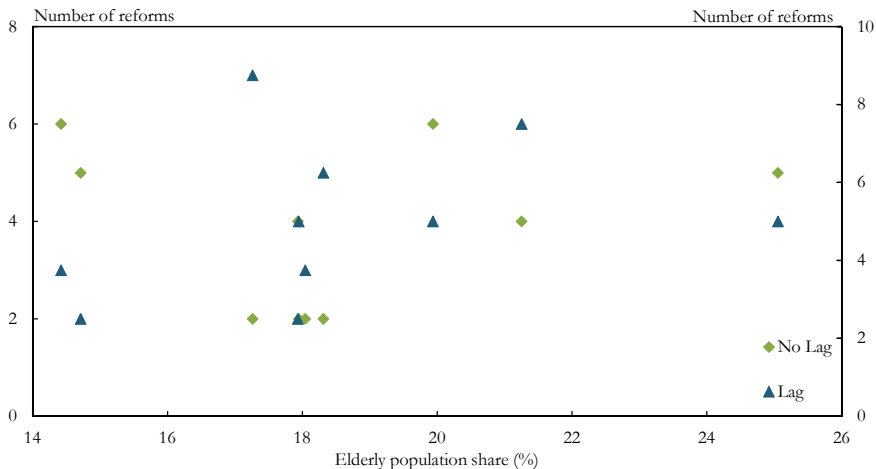
Structural Reforms and Pension Spending

- ▶ Lag vs no lag: no correlations with pension spending/GDP.



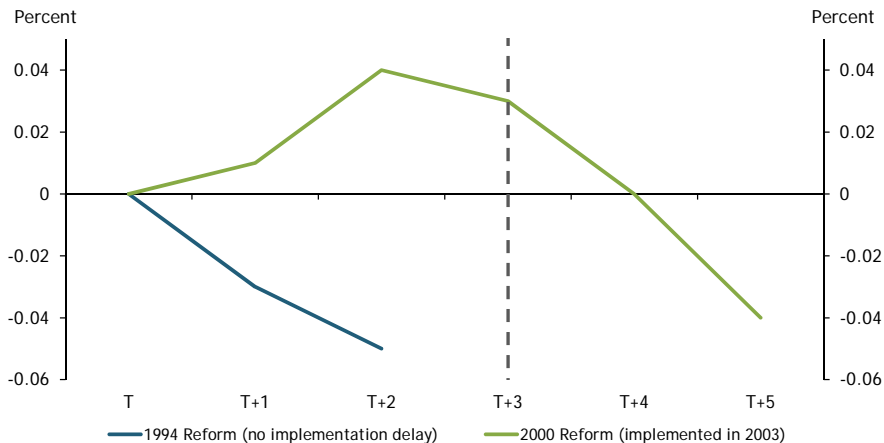
Structural Reforms and Elderly Population

- ▶ Lag vs no lag: no correlations with elderly population share.



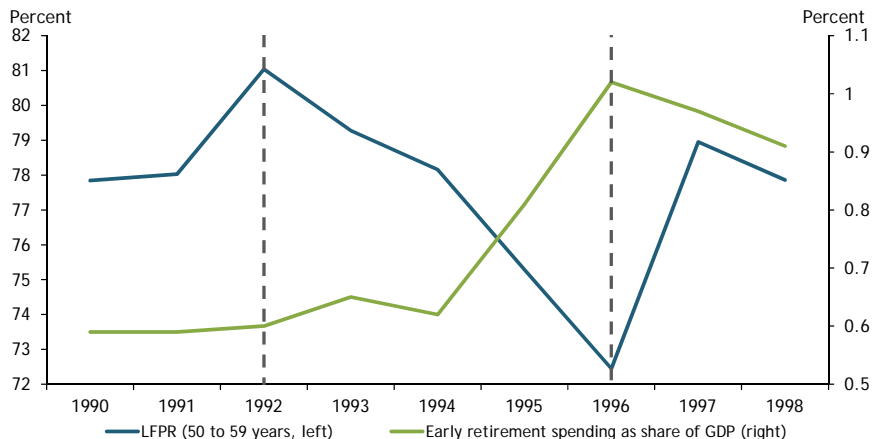
Case Study: Finland

- ▶ Raise minimum early retirement age in 1994 (55 to 58) and 2000 (58 to 60).
- ▶ Delayed reform in 2000, to be implemented by 2003, led to an initial increase in pension spending.
- ▶ Highlights potential importance of implementation delays



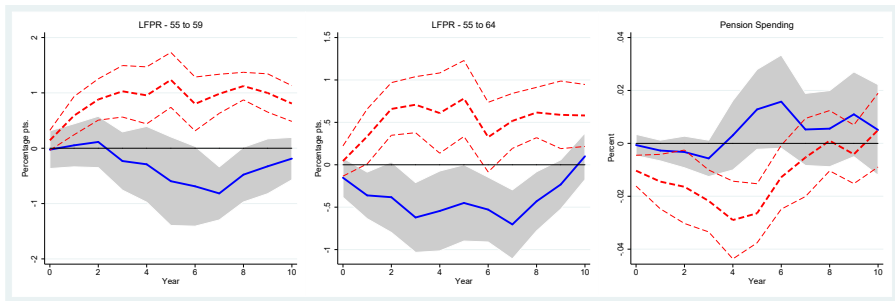
Case Study: Denmark

- ▶ Early transitional retirement scheme, introduced in 1992, expanded in 1994, and closed in 1996.
- ▶ Highlights sizable effects of pension policy changes on LFPR of older workers.



Robustness Check: Controlling for demographics and fiscal consolidation

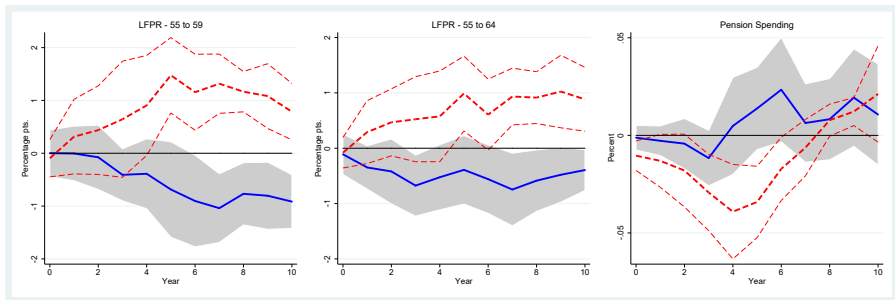
With (blue) vs. without (red) delays



▶ Back

Robustness Check: Reform Dummies without Intensity

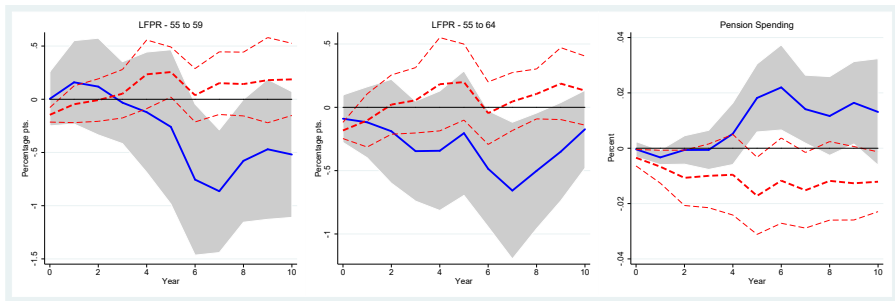
With (blue) vs. without (red) delays



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Robustness Check: Include both Major and Marginal Changes

With (blue) vs. without (red) delays



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