The retention effects of high years of service cliff-vesting pension plans☆

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HIGHLIGHTS

- We study a major reform in the Australian military's retirement plan.
- A 20-year cliff-vesting plan is substituted by a new one-year vesting plan.
- Most observed individuals choose the one-year vesting retirement plan.
- Removing the 20-year cliff-vesting considerably increases attrition rates.

ARTICLE INFO

ABSTRACT

We study the retention effects of the Australian military's decision to remove a 20-year cliff-vesting requirement from their retirement system in 1991. We follow to the present individuals who self-selected into and out of the 20-year cliff-vesting plan, as well as those who were forced out of the plan. Eliminating the high years of service cliff-vesting provision leads to consistently higher attrition over time.

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1. Introduction

One of the main criticisms of traditional retirement systems is the delayed vesting of retirement benefits, whereby no benefits are received if the employee separates before the vesting date and full benefits are received for retirement after the vesting date (Lazear, 1990). Vesting periods of up to 20 years have been the traditional norm for many public service organizations across the world (Disney and Johnson, 2001). Such "cliff-vesting" retirement systems are often regarded as unfair for employees who leave before the vesting date, but are seen as an important retention tool by employers (Warner, 2008).

While earlier vesting periods are gaining popularity, many public service retirement plans still vest at high years-of-service (YOS). For example, the US military – which employs over one million service members – still has a 20 YOS vesting period. In this paper, we provide what is to our knowledge the first empirical evidence on the retention effects of removing the cliff-vesting component of a public sector retirement system—useful information for organizations interested in removing high YOS vesting requirements.

We study a major retirement reform undertaken by the Australian Defence Force (ADF) in 1991 in which a 20 YOS cliff-vesting retirement scheme was replaced by one with a one-year vest. (The plans differed in other dimensions as well, as discussed in Section 2, but the removal of the 20 YOS vest was by far the most salient). A crucial consideration for any employer when changing a retirement plan is whether current employees will be "grandfathered" into the old retirement system. Out of a sense of fairness,

the ADF allowed members hired before October 1, 1991 to choose either the new or the old plan. All service members hired on October 1, 1991 or after were automatically enrolled in the new plan.

Comparing those who chose to stay on the old plan with those on the new plan, we show that facing a 20-year cliff-vest significantly reduced attrition before the vesting period. Comparing those who self-selected into the new plan with those who were enrolled in it automatically, we find similar attrition profiles which suggests that there was not much of a selection effect amongst the choice cohort in terms of retention probability, separate from the effect of the plan itself.

This paper adds to the small empirical literature on retirement reform in the military (e.g., Simon et al., forthcoming; Cunha and Menichini, 2014), and our results are in line with the simulation exercises in Ausink and Wise (1996) and Asch et al. (2013).

2. The retirement programs

We briefly describe the ADF retirement programs; for full details refer to Cole et al. (1990).

DFRDB. The Australian Defence Force Retirement and Death Benefits (DFRDB), introduced in 1972, is a defined benefit pension plan with a 20 YOS cliff-vest. Members retiring with 20 or more YOS are entitled to a pension equal to a percentage of their final pay; the percentage depends on total YOS, ranging from 35 for 20 YOS to 76.5 for 40 YOS or more. Those who leave service with less than 20 YOS do not receive a pension, yet have a "soft landing" in the form of a lump-sum payment calculated as the sum of 5.5% of each year's annual pay for the entirety of their tenure. As this lump sum amount does not include interest or adjustments for inflation, there is still a very large discontinuity in the present value of the retirement package at the 20 YOS mark.

MSBS. In order to address perceived inequities under DFRDB, the ADF created the Military Superannuation and Benefits Scheme (MSBS) and automatically enrolled all members who entered service on or after October 1, 1991. The MSBS has both defined benefit and defined contribution components. Importantly, it does not have a cliff-vest; rather, all members receive retirement payments upon reaching retirement age (55 years for those born before July 1960 and increasing by one year until those born after June 1964). The defined benefit is a function of the member's YOS and their final three-year-average salary, and is taken as a pension or a lump sum payout at retirement age. The defined contribution is a mandatory 5% of the member's annual pay, invested in a menu of government-managed funds; it cannot be withdrawn before retirement age.

Compared to DFRDB, MSBS is far more beneficial for those with less than 20 YOS and is slightly more beneficial for those who stay longer than 25 years. For those planning on retiring with between 20 and 25 YOS, uncertain future returns on government-managed funds would have made it difficult to determine which plan was more beneficial.[1]

The transition period. All members under DFRDB had to make the choice between DFRDB and MSBS by September 30, 1992.

3. Data

We use individual-level administrative data from the ADF on all new enlisted service members and officers from September 1, 1990 until September 30, 1992. Thus, we observe one cohort who enlisted between September 1, 1990 and September 30, 1991 and

Table 1
Descriptive statistics of the sample, by cohort.

	Choice cohort (FY1991) (1)	No choice cohort (FY1992) (2)
Chose MSBS	0.863	
	(0.005)	
Male	0.812	0.827
	(0.006)	(0.009)
Age at enlistment	20.066	19.998
	(0.049)	(0.075)
Officer	0.138	0.233
	(0.005)	(0.010)
Army	0.520	0.272
	(0.007)	(0.011)
Navy	0.223	0.436
	(0.006)	(0.012)
Air Force	0.257	0.292
	(0.006)	(0.011)
Observations	4586	1758

had a choice between DFRDB and MSBS – the FY1991 cohort – and another cohort who enlisted between October 1, 1991 and September 30, 1992, and were automatically enrolled in MSBS— the FY1992 cohort.

Two issues with this sample are of note: first, data on the remainder of the force in FY1991 is not available due to limited electronic record keeping at that time, which limits the scope of our analysis. Second, amongst the cohorts we do observe, retirement choice data are missing for those who left the military prior to July 1, 1994, again due to incomplete record keeping. This missing data could bias our estimates if there is differential attrition amongst those who chose different retirement schemes. While we do not have the data necessary to assess the extent of any potential bias (e.g., detailed demographic characteristics of choosers), it is reasonable to believe that the retirement scheme is a small component of an individual's choice to continue employment within the first three years of their career.

Table 1 contains summary statistics, by cohort, of the 6344 individuals in our sample. Amongst the choice cohort, 86.3% chose MSBS—a take-up rate in line with military leadership's predictions at the time. Over 80% of each cohort is male and the mean age at enlistment is about 20 years. Given the relatively small size of the ADF, the variations we see across cohorts in the percentage of officers and the branch of service are to be expected.

4. Analysis and results

We first explore the covariates of the retirement choice within the FY1991 choice cohort. Table 2 contains estimates from a linear probability model of choosing MSBS over DFRDB on the observable covariates for the whole sample, and for officers and enlisted personnel separately.

Theoretically, the choice between a high and low YOS cliff-vest is influenced by time preference and risk-aversion. As mentioned above, the present value of MSBS surpasses DFRDB for those who stay past 25 YOS. Given that officers are more likely in general to stay in the ADF longer, it is not surprising that officers were 7.7 percentage points more likely to choose MSBS than enlisted personnel. Females are more likely to leave the labor force in general to bear and raise children, and we find that females – enlisted more so than officers – are more likely to choose MSBS, the more flexible option. Age at the time of enlistment is positively associated with the propensity to choose MSBS, albeit with small economic significance. Navy and Air Force members were more likely than Army members to choose MSBS: anecdotal evidence suggests that informal informational campaigns at the time of the choice were service specific, but we do not have data on what information

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[1] A financial comparison between DFRDB and MSBS for a representative enlisted member is available in the Online Appendix.