

Education & Innovation

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Problem

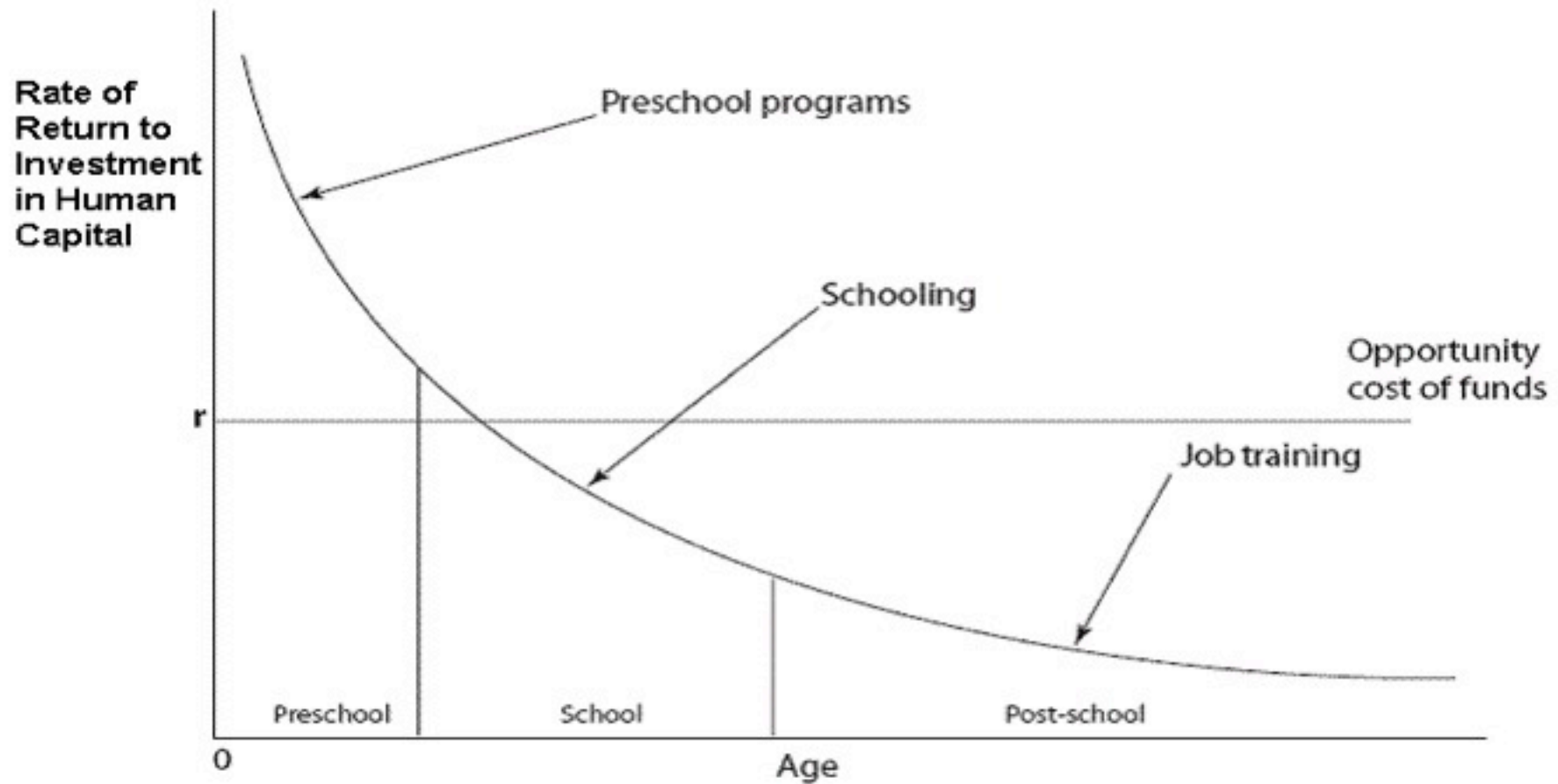
- By its nature a lot of what I want to discuss is more medium to long term...enhancing the long term productivity of the economy.
- but we have a lot of short term problems....
- so this is firmly maximising subject to a constraint, but this forces clear choices and a strong effort not to repeat the mistakes of the past on this area of policy.

Outline

- Economics of Education framework
- Early years
 - Direction of policy
 - Alternatives
- Primary/Secondary education
 - Class size
 - Alternative targets
- Higher education
 - fees as barrier?
 - R&D investment

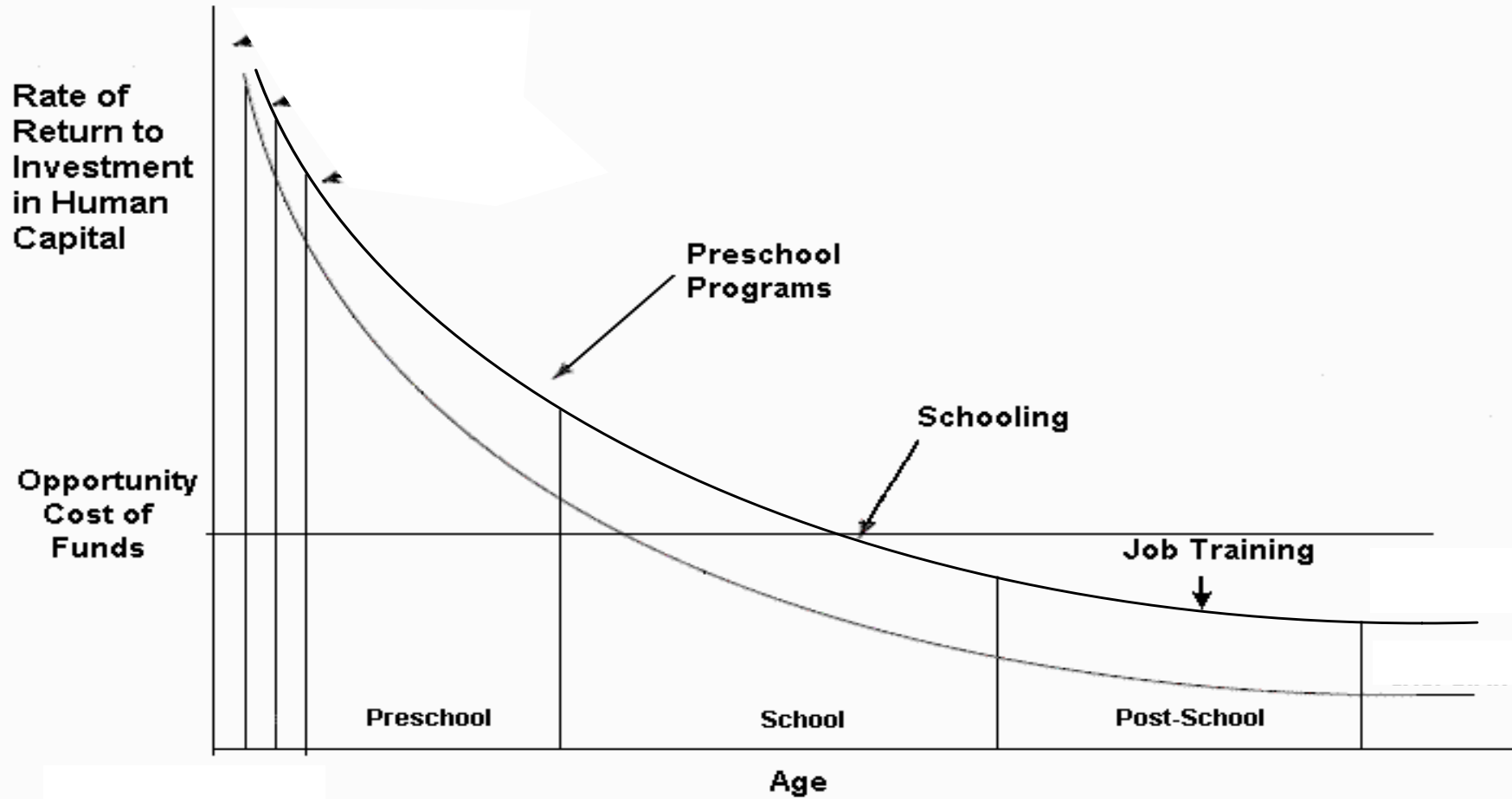
Framework

Rates of Return to Human Capital Investment Setting Investment to be Equal across all Ages



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EARLY YEARS

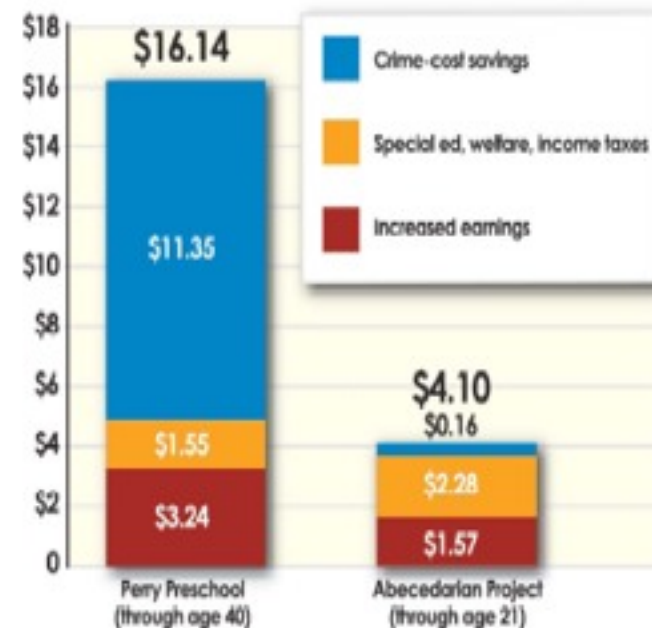
Early Years Strategy - Policy

- Quick lesson in economics of childcare:
 - *quality childcare good for outcomes (attainment, long term economic impact)*
 - *bad childcare damaging*
 - *quality childcare has most impact on low SES children.*
- 2009 Budget scrapped the Early Child Supplement - very sensible and should never have been introduced in the first place.
- The alternative - in effect three hours per day of childcare, in 'registered' creches, in a circa €500m per annum initiative.
 - *Creche must follow a framework ('Siolta') which is in effect an 'ISO' standard - registration, baseline assessment and validation at provider level.*
 - *Not a curriculum as such, nor a quality control framework (individual or provider).*

Early Years Strategy - Caveat

- Underpinning economic logic is based largely on US evidence, often from long term follow up of a small cohort of mid-1960s children.
- ‘Madoff’ like returns often quoted - 17:1
- Not clear this can be replicated in Ireland or indeed Europe (but we are trying!)

Cost/Benefit for Two Early Childhood Programs
(Dollars returned for each dollar invested)



Source: Schweinhart, Montie, Xiang, et al. (2005); Masse & Barnett (2002)

Early Years Strategy

- The problem:
 - Little in 'Siolta' will do anything to enforce a levelling of the 'quality' playing field - not what it is designed for and no resources to improve quality of centres.
 - Rollout makes evaluation difficult - all preschools can apply but:
 - Low SES - 'community creches' already in place.
 - High SES - paying for (perceived?) quality (Montessori etc) or don't need the assistance financially or in terms of child development.
 - Mid SES - working parents will get some support, non-working parents will also be able to avail of this but perhaps not in substantive enough a manner to induce a labour supply response.
 - Sizeable deadweight?
- Alternatives:
 - Invest in a quality framework that will raise and enforce standards including capital development in preschools and preschool staff.
 - Maintain current 'community creche' initiatives within this improved standards environment.
 - Consider a WFTC style credit to assist working families.
 - Some up-front investment needed but dramatically reduced ongoing costs, with social returns maximised (in effect a targeted early years initiative coupled with a working families subsidy).

PRIMARY/SECONDARY EDUCATION

The big fallacy....

- There is little convincing causal evidence that class size matters.
 - *Irish class sizes are large on average by OECD standards, and our outcomes about (or even above) average - but little connection between these two facts.*
 - *This does not prove that Irish teachers are more productive/successful than OECD counterparts!*
 - *In marginal terms, moving from 28 to 29, or back again, will have little measureable impact on the outcomes (attainment etc) but is an incredibly expensive strategy.*
 - *Bottlenecks and shortages are already a problem.*
 - *Revised Programme for Government reversals lacks any convincing evidence base.*
- There is scant evidence that physical space matters.
 - *BSF in UK does suggest modest gains in attainment from MAJOR rebuilding/renovation of the School stock when coupled with progressive management.*
 - *No evidence based on randomised trials as yet.*

What works?

- Money and performance are not as aligned as we might think.
 - *Ireland spends about the same as Australia, Finland, Netherlands, Japan (and considerably more than NZ, Korea, Czech) but gets much lower maths scores.*
 - *Texas and California have similar demographics, but Texas has lower spending per student and students are about one year more advanced than Californian students.*
- Some schools are better than others.
 - *Variation between schools*
 - *Variation within schools.*
 - *Private schools are not universally better than public schools.*
- Some teachers are better than others.
 - *US evidence - median students in year zero are in 90th percentile with high-performing teachers three years later, but in 37th percentile with low-performing teachers.*
 - *UK evidence - pupil attainment four times more varied at classroom than school level.*
 - *Teachers that are most qualified in their subject tend to teach better.*

What to do instead of reversing class size increases?

- Based on any reasonable assumptions:
 - *we have a sizable population of children that are not reaching their potential due to intergenerational problems of persistent disadvantage) - this is a longer term problem.*
 - *we have a sizable population of able children that are not progressing as we would expect (not reaching their potential due to intragenerational problems) - this can be dealt with.*
- We need to invest in trying to find out why
 - *Data will be needed that is public and transparent - so lets lose the hangup about league tables.*
- Educational experiments provide hints:
 - *'Golden Handshakes', CPD and performance pay had positive effects (Angrist and Lavy, 2001)*
 - *EMA - rebranding of child benefit yielded sizable changes in participation rates in 16 to 18 cohort (i.e. to A-Levels) in target group suggesting sensitivity to opportunity cost of education. Similar outcomes in experimental work in Israel, US.*
 - *New Era evaluations at UCD (Denny, Doyle et al) show that children who make it to UCD through access programme do just as well as those entering through conventional points system.*

Higher Education, R&D and the PhD Market

Sounds of guns being fired at feet....

- The fees debate has turned into a complete debacle.
- We can find NO evidence that causally links abolition of fees in mid 1990s to participation and equally no reason to suspect their return would have adversely impacted on choice.
 - *Earlier results suggest money is not the major issue (cf. access programme evaluations).*
 - *Institutions have little control over who turns up at the gate each September but are being penalised (and pilloried) over the SES mix of those students.*
 - *Fees needed to be returned.*
 - *Recall that the UK experience saw fees return coupled with an INCREASE in exchequer contributions to HE.*
 - *My preference - deferred repayment system based on earnings.*
 - *Institutions need to be able to set those fees, vary them by programme/degree.*
 - *Institutions need to be able to raise additional funding without euro for euro taxation.*
 - *Institutions need to be able to break civil service relativities and negotiate performance contracts (particularly with academics, to respond to market, outside opportunities, output etc).*

McCarthy and R&D

- What drives the investment in 4th Level Ireland? Attracting FDI, generating spin-off companies, scaling up the SME sector.
- Research creates stock of knowledge that enters production function - Griliches
- Most OECD countries subsidize R&D via tax treatments etc, and have public funds for research
 - *Public support might 'crowd out' private support or may support research that would be carried out anyway.*
 - *Dutch experiments on provisions to support start-ups (payroll tax waivers) show that €100 of government money generates €50 to €80 euro of additional R&D employment.*
- Recent debate sparked by McCarthy Report has been....vigorous - questioning the value based on stated aims of R&D investment:
 - *Some issues seem logical - consolidation of the research funding infrastructures (an Irish National Science Foundation, perhaps?)*
 - *SFI - "...areas of greatest strategic value to Ireland's long term competitiveness and development" but how can Government/Agency choose these areas?*
 - *Can't Ireland be an importer of this technology?*
- Not clear that the current debate has been solidly rooted in evidence but equally not clear that the evidence exists PLUS it is 'after the fact' evidence.

Moving the R&D Debate Forward

- We do have evidence that private spend on R&D has increased more quickly than the public spend - so perhaps we are seeing 'crowding in' and not 'crowding out'
 - *Similar experiences in countries like Israel (\$1.41 firm expenditure for every \$1 in public expenditure)*
 - *Private R&D spend 'free ride' on the review process of the public R&D investments.*
 - *Regardless, this complicates the assessment of the social return.*
- Assessment problem:
 - *Outputs? immediate (papers), second-order (citations), broader (profit, prominence)*
 - *Successful R&D policy raises the quality of jobs perhaps, but not the quantity of jobs.*
 - *Increasing the number of (science) graduates will not, of itself, promote R&D*
 - *Timeframe? long (and variable) lags in mapping to production function*
 - *Unit of analysis? measure relative to other regions OR measure rates of change?*
 - *Counterfactual? marginal vs. average, interdependence, other models (contract research, consultants etc)*

PhD Market

- SSTI commits to doubling of the numbers of PhD and postdoctoral researchers by 2013.
 - *Hard task at the best of times.*
 - *Disproportionate impact across the sector (UCD/TCD have 50% of this cohort so capacity for doubling numbers is a challenge).*
- McCarthy questions the absorbency of the labour market for the PhD increase.
 - *Large amounts stay in academia as postdoctoral researchers.*
 - *Public sector large employer of PhD graduates.*
 - *True in many countries (52% of all graduates in the UK go to the public sector)*
 - *Perhaps short term not a big problem as long as the private sector evolves in the same way.*
- Market failure - business sector does not hire PhDs due to a mismatch in the skills requirements.

Skills Matching

- Correcting this failure is not going to happen from a 'Field of Dreams' approach through doubling numbers - we need incentives in place encourage choice of topics for societal, public and private needs.
 - *Getting this wrong is costly - Cornell evaluation of Graduate Education Initiative showed poor matching of student and topic/supervisor AND longer durations of study.*
 - *Not doing it is costly - a very well funded graduate initiative in economics would cost a tiny fraction of the peak to trough fall in GDP but might have prevented a very large chunk of this fall!!*
 - *Mismatch generates lower wages, lower job satisfaction and higher turnover in employment (Bender and Heywood, 2006) - everyone loses.*
- If we are to do something distinctive we need to understand what attracts (or repels) students from the 4th level agenda.
 - *If PhD candidates only expect to work in academia, returns will be as disappointing as McCarthy hints.*
 - *This is a human resource management issue that is not well understood, particularly with the top-down agenda/theme setting structure in place.*
- Innovation Task Force, and initiatives such as the UCD/TCD Innovation Alliance would we well advised to zone in on this micro-level.

Thank you!