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# **The Economic Discourse**

Y C Richard Wong  
The University of Hong Kong  
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# Outline

- Economic frame for human capital investment to promote growth and equality
- Growing recognition of the significance and relevance of early childhood learning
- Intergenerational mobility – Denmark versus the U.S.
- Knowledge society – STEM and study pressure

# Nature of human capital

- Why human capital is unique? Embedded-ness
- Own time is necessary – cannot hire others to learn and learning takes time
- Learning makes future learning efficient – early learning important for effectiveness
- Learning incentives declines due to mortality

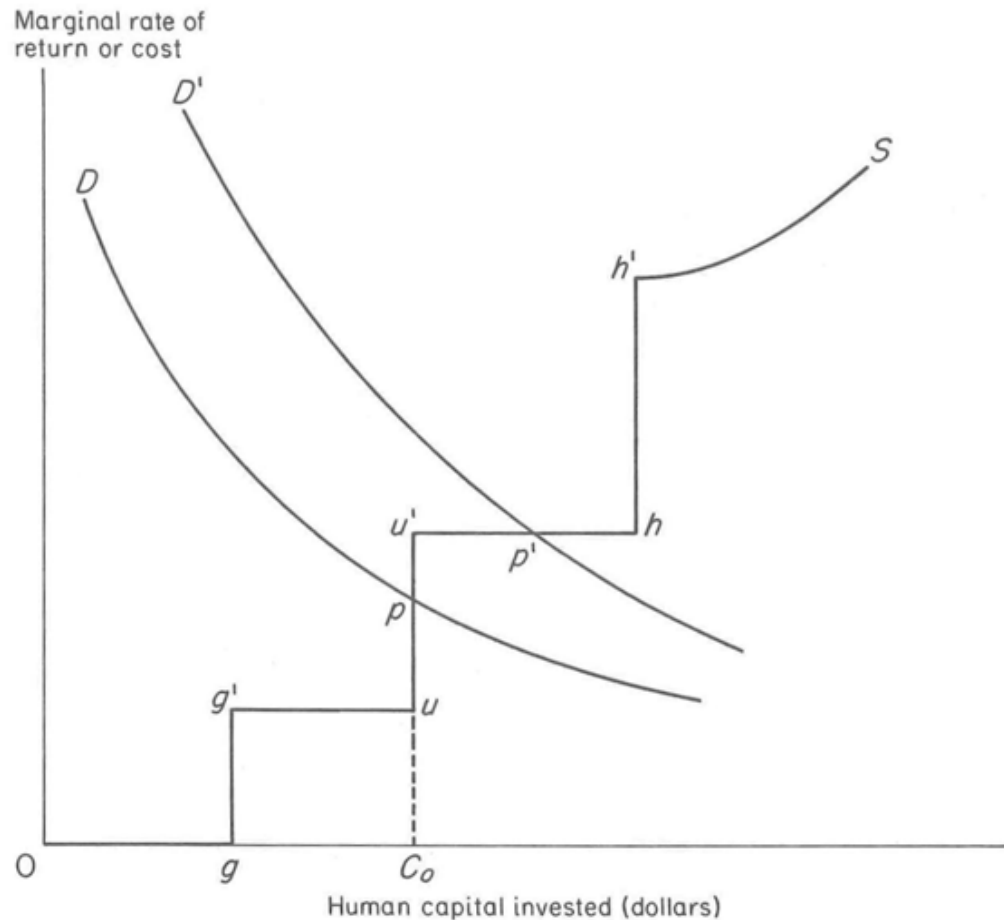
- Role of family—Charles Murray *Coming Apart*.
- Intergenerational mobility—role of family (James Heckman) versus neighborhood (Raj Chetty).
- Intergenerational mobility—measuring education or earnings and the case of Denmark versus the U.S.

- Human capital cannot be bequeathed
- Prohibition of indentured servitude means capital market imperfections matters greatly
- Family background and locations (countries, urban-rural divide, neighborhoods) matters
- Institutions matter – private property rights, rule of law

# Supply & Demand for Human Capital Investment

CHART 4

Supply and Demand Curves for Investment in Human Capital



# “Egalitarian” approach.

- Under this approach demand conditions are the same for everyone, and that the only cause of inequality is differences in supply conditions.
- It assumes that everyone more or less has the same ability to benefit from investment in human capital.
- Investment and earnings differ because of differences in background; in luck, family wealth, subsidies, etc. which give some persons the opportunity to invest more than others.

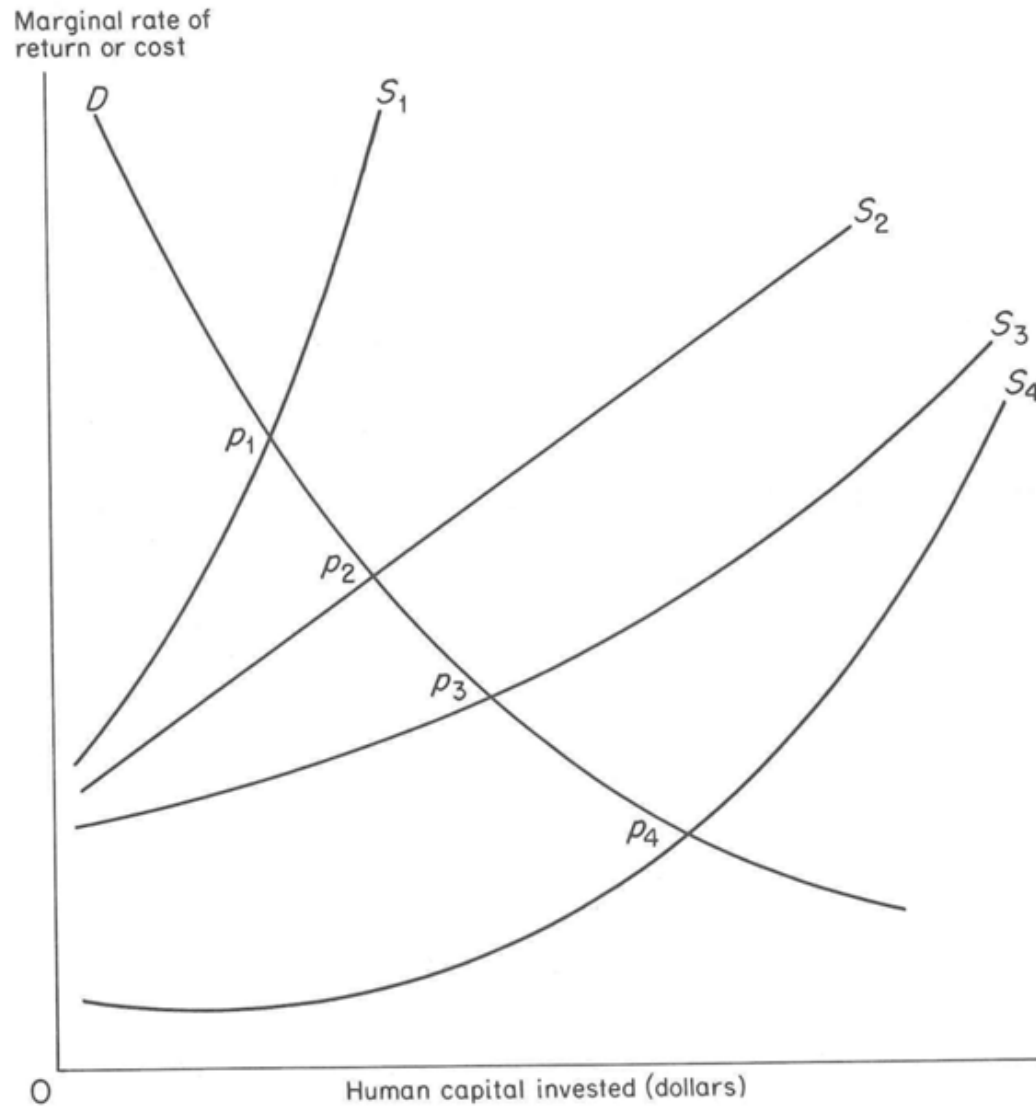
- Eliminating background differences would eliminate these differences in opportunities, and thereby eliminate the important differences in earnings and investments.
- Generally, the most important cause of differences in opportunities is differences in the availability of funds.
- Some may live in areas providing generous government and other subsidies to investment in human capital, or receive special scholarships because of luck or political contacts.



- Others may be born into wealthy families, have generous parents, borrow on favorable terms, or willingly forego consumption while investment.
- If supply conditions alone varied, the equilibrium positions of different persons would be given by the intersections of the common demand curve with the different supply curves; the points P1, P2, P3 and P4 in Chart 5.

CHART 5

Equilibrium Levels of Investment in Human Capital Resulting from Differences in "Opportunities"



- The distribution of the total capital invested obviously would be more unequal and skewed, the more unequal and skewed was the distribution of supply curves, earnings would be related to the amount of capital invested by

$$E = \bar{r} C,$$

- where  $E$  is earnings,  $C$  the total capital invested, and  $\bar{r}$  the average rate of return on  $C$ .

- The distribution of E clearly depends on the distribution of C; indeed, if the demand curve for capital was completely elastic or horizontal,  $\bar{r}$  would be the same for everyone, and the distribution of earnings and investments would be identical (except for a difference in units  $\bar{r}$ ).
- But, since  $\bar{r}$  declines with more investment, therefore, earnings are likely to be less unequally distributed and less skewed than supply curves (that is, than opportunities).

- Under the “egalitarian” approach large reductions in the unequal distribution of supply curves are needed to achieve modest reductions in the unequal distribution of earnings.

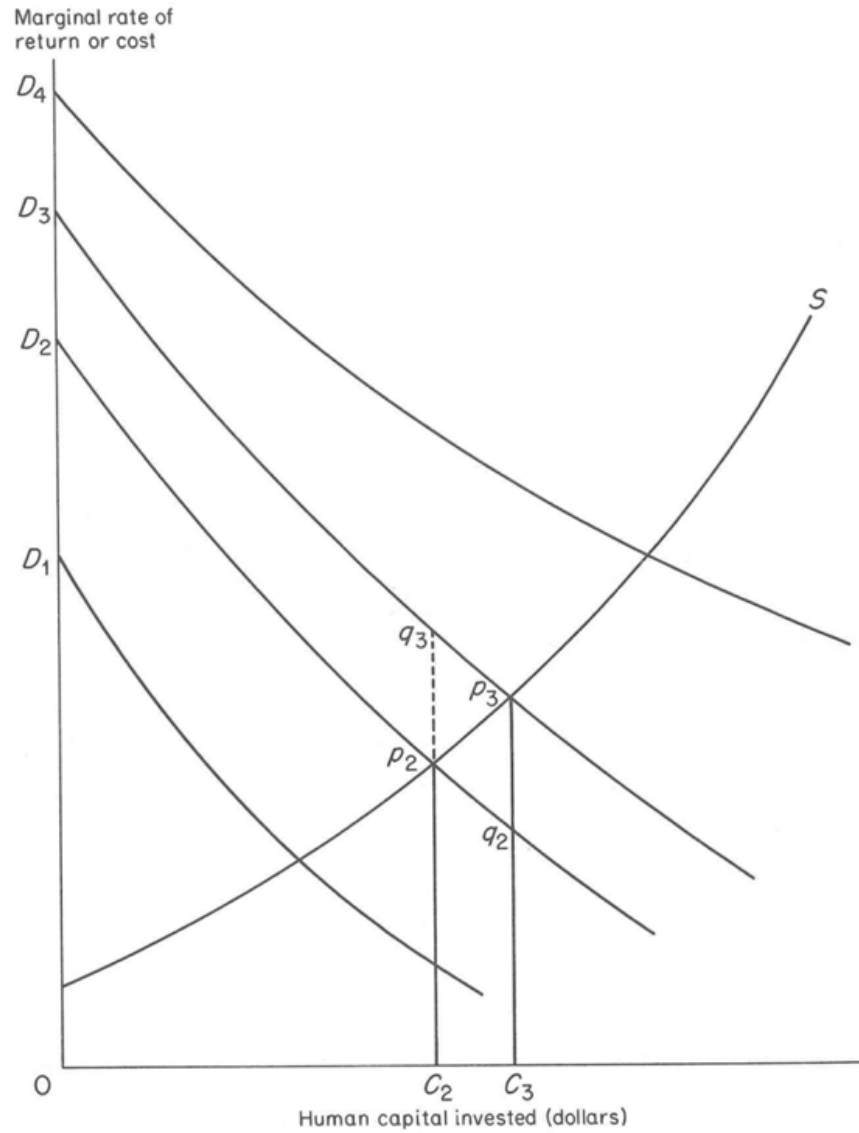
## “Elite” approach

- At the other end of the spectrum is the assumption that supply conditions are identical and that demand conditions alone vary among persons, which assumes that everyone more or less has effectively equal opportunities.
- Actual investments and earnings differ primarily because of differences in the capacity to benefit from investment in human capital: some persons are abler and form an elite.

- If demand curves alone varied, the capital investments and marginal rates of return of different persons would be found at the intersections of the different demand curves with the common supply curve.
- In Chart 6 there clearly is a positive relation between the height of a demand curve, the amount of capital invested and the marginal rate ( $\bar{r}$ ).

CHART 6

Equilibrium Levels of Investment in Human Capital Resulting from Differences in "Abilities"





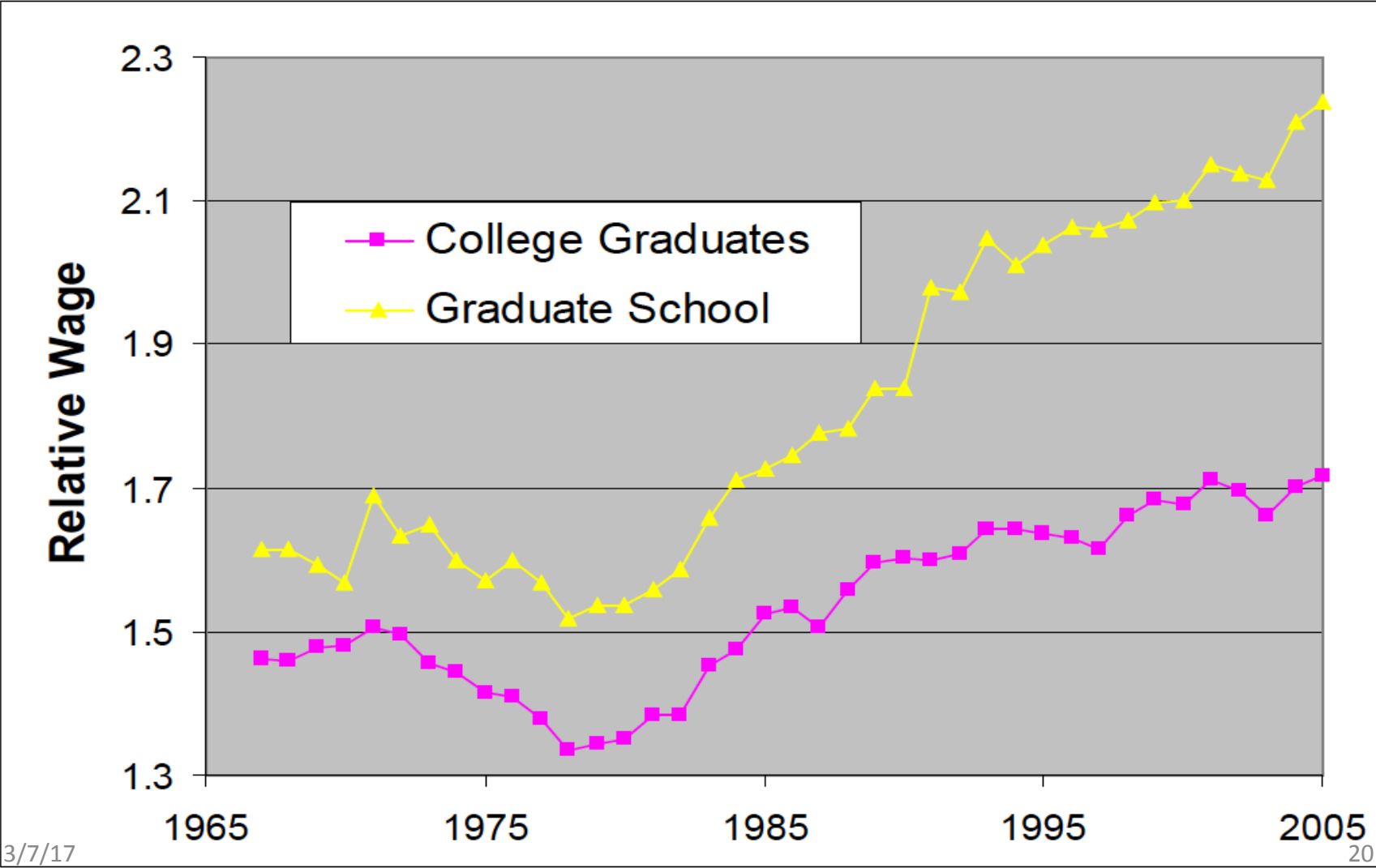
- Earnings and capital investments are clearly more unequally distributed and skewed the more unequally distributed and skewed are demand curves.
- Therefore, earnings would tend to be more unequally distributed and skewed than investments.

## A comparison of these approaches

- The “egalitarian” approach implies that the marginal rate of return is lower, the larger the amount invested in human capital, while the “elite” approach implies the opposite relation.
- Marginal rates of return appear to decline in the United States as years of schooling increase before the 1980s, which supports the “egalitarian” approach.

- However, after the 1980s the estimated marginal rates have been rising as schooling increases, which supports the “elite” approach.
- In Hong Kong 1976-2011 the estimated marginal rates have been rising as schooling increases (see next slides)

# US Education Wage Premiums



# HK rates of return to schooling

	Average years of schooling	Percentage w/ tertiary education	Percentage w/ degree education	Average Rate of return %	Marginal Rate of return %		
					S=6	S=12	S=16
1976	5.4	3.1	2.3	8.8	6.6	2.6	16.6
1981	6.1	2.6	2.5	8.3	5.8	2.5	17.0
1986	6.6	3.9	3.3	9.9	6.2	4.5	20.0
1991	7.1	4.5	4.4	10.5	5.7	5.2	21.5
1996	7.7	4.1	8.2	11.5	5.6	4.8	21.0
2001	8.1	5.8	10.5	12.7	5.4	5.9	23.0
2006	8.7	6.8	13.2	12.7	5.5	4.3	20.1
2011	9.2	8.5	16.0	14.8	5.3	5.8	22.7

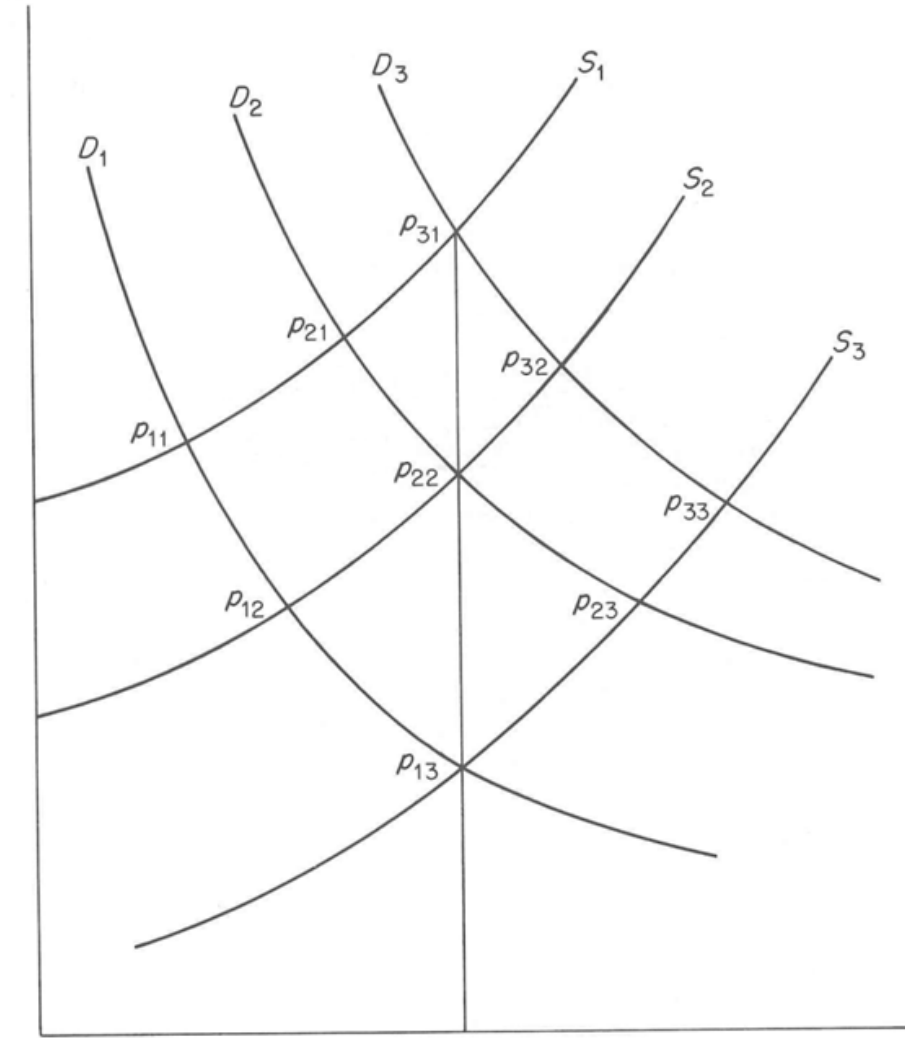
- In the “egalitarian” approach, observed skewness is more difficult to explain because it implies still greater skewness in the distribution of opportunities, a skewness that may be associated with a skewed distribution of gifts and inheritance.

- If both supply and demand curves varied, different persons could invest the same amount, and yet some could earn more than others because they had higher demand (and supply) curves;
- in Chart 7, the same amount would be invested by persons with D3 and S1, D2 and S2, and D1 and S3.

CHART 7

Equilibrium Levels of Investment in Human Capital Resulting from Differences in "Abilities" and "Opportunities"

Marginal rate of return or cost



0

Human capital invested (dollars)



- If supply and demand curves were negatively correlated, equilibrium positions will be represented by  $p_{31}$ ,  $p_{22}$ , and  $p_{13}$  in Chart 7; and
- if they were positively correlated, by  $p_{11}$ ,  $p_{22}$ , and  $p_{33}$ .

- There are several reasons why supply conditions do not vary independently of demand conditions.
- Abler persons are more likely to receive public and private scholarships, and thus have their supply curves shifted downward.
- Or children from higher-income families probably, on the average, are more intelligent and receive greater psychic benefits from human capital.

- On the other hand, private and public “wars” on poverty can significantly lower the supply curves of some poor persons.
- Since the first two considerations have, unquestionably, been stronger than the third, it is reasonable to presume a positive correlation between supply and demand conditions, perhaps a sizable one.

- The chart clearly shows that a positive correlation increases the inequality in both investments and earnings; it also increases skewness by increasing the earnings and investments of persons who would have relatively high earnings and investments anyway.

- An impression of a negative correlation between supply and demand conditions – that is, between opportunities and capacities – is sometimes obtained from persons investing the same amount.
- As the curves D3 and S1, D2 and S2, and D1 and S3 in Chart 7 clearly show, however, the supply and demand curves of persons investing the same amount must be negatively correlated, regardless of the true overall correlation between them.

# Some Applications

# Equality of opportunity

- Why creating equal opportunity is an efficiency argument and not just about equality
- Identical supply curves can be achieved in many ways:
  - subsidies to institutions providing investments, such as through the public schools;
  - scholarships to investors, especially poorer ones; government-financed or insured loans to investors;
  - “head start” programs for poorer children; and so on.

# Objective selection criteria

- Rationing entrance into highly subsidized schools and other investment institutions not by “favoritism,” but by “objective” standards, such as examination.
- Often confused with policies that equalize opportunities.
- Generally, persons failing examinations are not prevented from continuing their investments – only the cost of funds to them is greater.
- Objective standards clearly do not, therefore, equalize opportunity because persons selected obtain cheaper financing.



- A system of objective standards tends to increase the positive correlation between ability and opportunity, the resulting inequality in earnings and investments would exceed that under equality of opportunity.
- Indeed, the resulting inequality would even tend to exceed that under a system selecting applicants at random because objective standards encourage abler persons, who probably earn and invest more than others anyway, to earn and invest still more because they are heavily subsidized.

# Compulsory minimum investments

- Virtually every country has laws requiring a minimum investment in human capital. Usually a minimum number of school years is required.
- If legislation is passed then some children will be forced to increase their investment.
- This reduces the inequality in investments and through that in earnings as well.
- In effect, the inequality of opportunity is reduced by bringing supply curves closer together.

- Compulsory minimum standards reduce the inequality in earnings and investments by twisting the supply curves, but widen the inequality in marginal rates, and results in a less efficient allocation of the total investment in human capital.
- Students with a low rate of return are compelled to invest (it is analogous to rich parents investing a huge amount in their children).

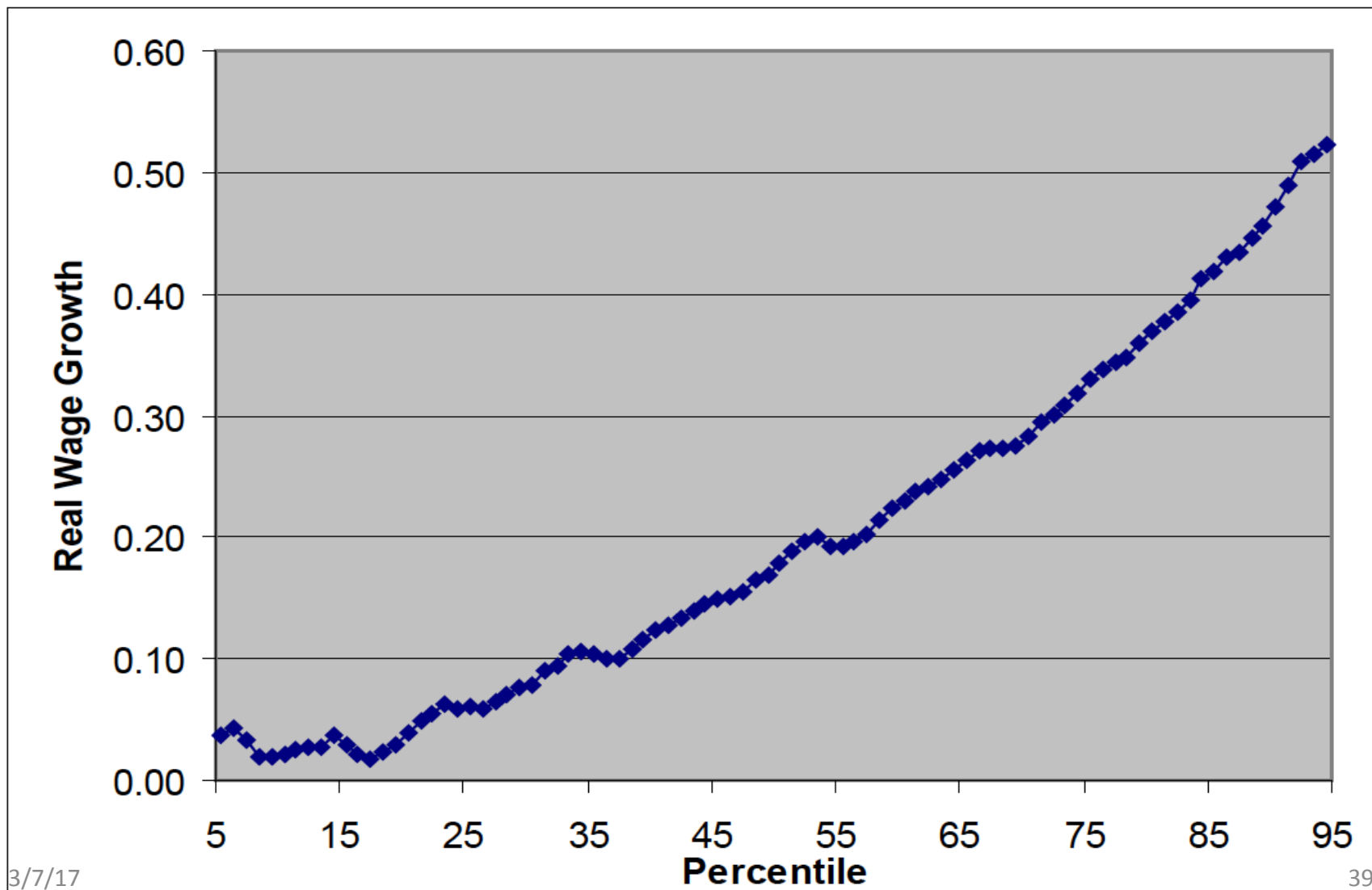
# Improvements in the capital market

- A major cause of both the rise in the cost of funds is the rationing of cheaper sources of funds due to a segmentation of the capital market.
- Government funds are generally the cheapest because of subsidies, own funds are usually cheaper than those borrowed commercially because of transaction costs.
- An improvement in the capital market would have somewhat conflicting effects on the distributions of earnings and of investments.

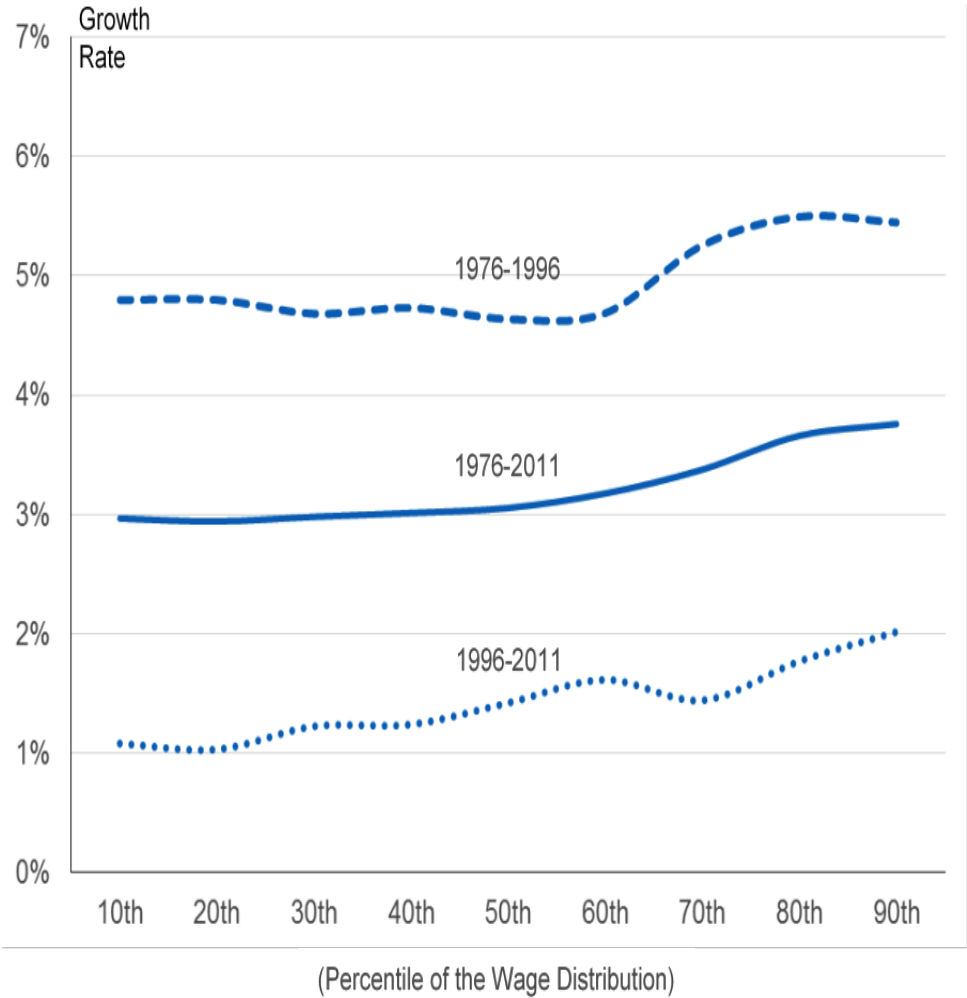
- A reduction in the segmentation of the capital market means (1) reducing the dispersion of supply curves, and (2) increasing the supply elasticities.
- A narrower dispersion of supply conditions reduces the inequality, while increased elasticities of supply increase both the inequality and skewness in earnings and investment.
- It may or may not reduce the inequality in earnings and investments, but does tend to reduce the inequality in marginal rates, and thus improve efficiency.

- If all supply curves were horizontal, equalizing opportunities not only reduces the inequality in earnings and investments, but also reduces the inequality in marginal rates, which means that the total investment in human capital is allocated more efficiently.

# US Wage growth by percentile 1968-2004

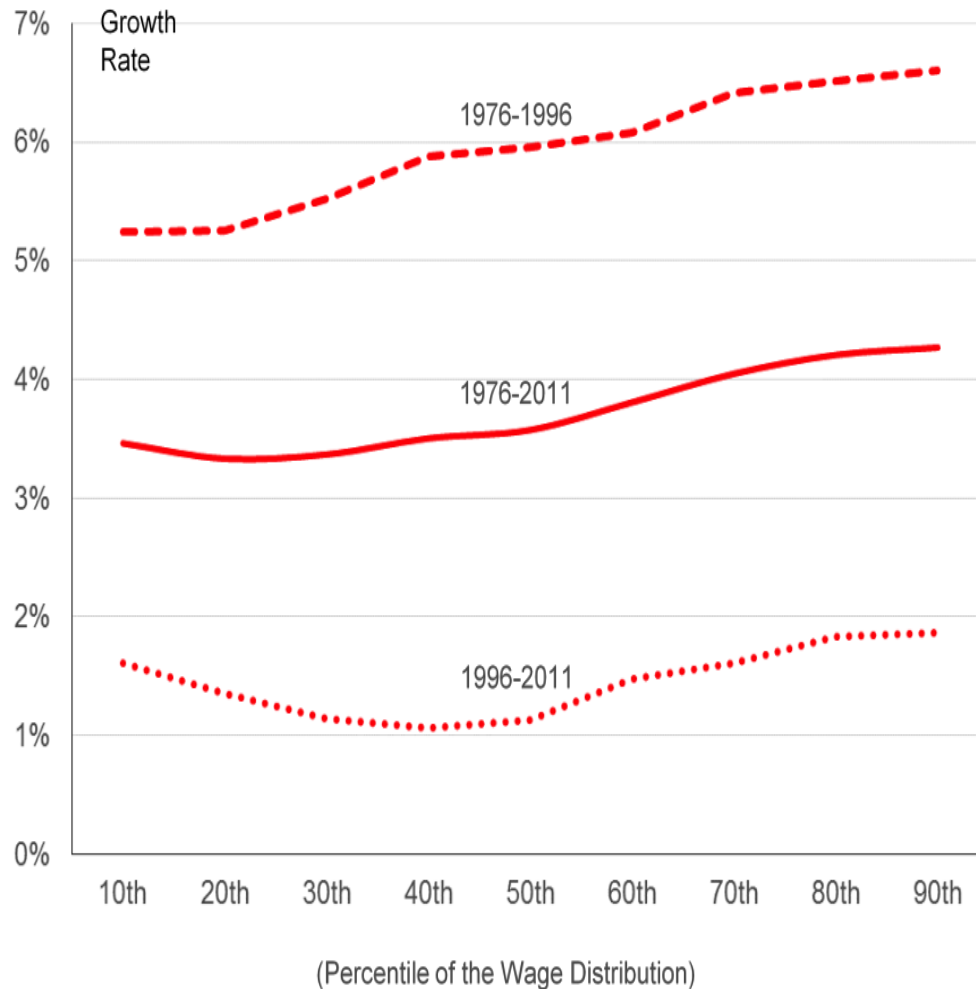


# Men's Annual Wage Growth by Percentile 1976-2011





# Women's Annual Wage Growth by Percentile 1976-2011



# Explaining Changes In Education Returns Using Supply and Demand

- Growth in the university premium can be explained by a very simple model
- Demand grows steadily over time
- Fluctuations in supply cause education premiums to fluctuate
- Supply grows faster than demand → premium falls
- Demand grows faster than supply → premium rises
- Effect magnified if we have biased technological progress in favor of more educated workers

- Underinvestment in education, especially secondary education and professional education in Hong Kong.
- Problem exacerbated by the rapid influx of low education immigrants have exacerbated wage inequality.
- Low upward mobility of university graduates have been the result of stop-go approach to the expansion of university education.

# The Knowledge Economy

- Knowledge will be key resource of the next society, and knowledge workers its dominant ones
- Its characteristics are:
  - Borderlessness—knowledge travels effortlessly
  - Upward mobility—available to those with formal education
  - Potential for both failure and success—anyone can acquire knowledge but not everyone can win
- Knowledge society will be highly competitive for organizations and individuals

- Every organization has to be globally competitive even if it serves a local market because customers will have access to knowledge worldwide
- Knowledge technologists will become the dominant social, and perhaps political force
- The fastest growing workforce is knowledge workers, and is making up half the workforce in the rich countries.

- The new workforce are capitalists because knowledge is their capital—key resource. As a group they are capitalists being majority shareholders of mutual funds and pensions.
- Effective knowledge is specialized and works in partnership with others through organization and see themselves in relation to others as juniors—seniors rather than bosses-subordinates.
- Historically there were men's work and women's work, knowledge work is unisex.

- High knowledge workers—doctors, lawyers, scientists, clerics and teachers—have been around, but increasingly knowledge technologists work with their hands using a lot of knowledge acquired through formal education (not apprenticeships).
- They will dominate the workforce and identify themselves as professionals even when a large part of their time is doing manual work with their hands.
- Knowledge is non-hierarchical and so they see themselves as professionals not as subordinates, and expects to be treated properly.

- These workers need formal education and continuing education because knowledge rapidly obsolesces.
- These workers identify with their knowledge, are highly mobile within their profession even when their skills are highly specialized.
- Money is important to the knowledge worker, but as professionals they do not see it as a substitute for performance and achievement, and consider their job as a life.



- Upward mobility in a knowledge society has unlimited opportunities if formal education is accessible to all.
- Impediments to such mobility is viewed as a form of discrimination. And success brings not just monetary rewards but social standing.
- The price of upwards mobility of the knowledge society is competitive stress, even at the learning stage, and creates hostility to learning.

- Gaining a formal education qualifies a person to enter the ranks of a knowledge worker, but does not guarantee success.
- Plutocracy is a possible danger as rich parents can better prepare their children for such competition.

# Challenges of the Knowledge Economy in a New Pluralistic Society

- Agriculture has declined since industrialization.
- Manufacturing has and will continue to decline.
- Knowledge intensive products—health care and education—will and continue to rise.
- Decline of farming led to widespread protectionism of agriculture. And so will the decline of manufacturing, especially through subsidies, quotas, and regulations.
- The challenges of the new society will be even greater than the new economy.

- In the developed countries, growth of older generation, shrinking of younger generation
- It is not possible to save existing pensions system, people would have to work until their mid-70s
- How to create new employment patterns to attract and hold the older workforce becomes important.
- Many above age 50 will be part-time workers and self-employed, to whom employment laws and regulations do not apply, and organizations have to learn how to manage such people

- In every developed country, but also in China and Brazil, the birth rate will be below replacement rate.
- Immigration will become an important and highly divisive issue, and cut across all traditional political alignments.
- As new family formation ceases to be the driver of domestic markets, the homogeneous mass market may split into two: a middle-aged mass market and a small youth one.

# Knowledge workers have more time

- Knowledge professionals may plateau in mid-life. They have reach their maximum achievements.
- If these workers fail to develop a non-competitive life and community of their own, and some serious outside interest, they are in trouble.
- Outside interest will give them opportunity for personal contribution and achievement outside work for pay and in voluntary work.
- This will shape the new pluralistic society.

## Secular Trends in Time Use: hourly division of the day average male household head 365-day year

	Ca. 1880	Ca. 1995	Ca. 2040
Sleep	8.0	8.0	8.0
Meals and essential hygiene	2.0	2.0	2.0
Chores	2.0	2.0	2.0
Travel to and from work	1.0	1.0	0.5
Work	8.5	4.7	3.8
Illness	0.7	0.5	0.5
Sub-total	22.2	18.2	16.8
<b>Residual for leisure activities</b>	<b>1.8</b>	<b>5.8</b>	<b>7.2</b>

R W Fogel, *The Fourth Great Awakening and the Future of Egalitarianism*, Chicago, 2000

## Secular Trends in Time Use: hourly division of the day average male household head 365-day year

	Distribution of Expanded Consumption		Long term income elasticities
	1875	1995	
Food	49	5	0.2
Clothing	12	2	0.3
Shelter	13	6	0.7
Health care	1	9	1.6
Education	1	5	1.6
Other	6	7	1.1
Leisure	18	68	1.5

R W Fogel, *The Fourth Great Awakening and the Future of Egalitarianism*, Chicago, 2000



# Estimated Trends in the Lifetime Distribution of Discretionary Time

	1880	1995	2040
Lifetime discretionary hours	225,900 (100%)	298,500 (100%)	321,900 (100%)
Lifetime earn work hours	182,100 (80.6%)	122,400 (41.0%)	75,900 (23.6%)
Lifetime voluntary work hours	43,800 (19.4%)	176,100 (59.0%)	246,000 (76.4%)

R W Fogel, *The Fourth Great Awakening and the Future of Egalitarianism*, Chicago, 2000

# The New Pluralism

- Society in all developed countries has become more pluralist. It is splintering into numerous more or less autonomous institutions, each requiring its own leadership and management, each having its own specific interest.
- Earlier pluralist societies destroyed themselves because no one took care of the common good.
- To avoid this the leader of all institutions have to learn to be leaders beyond the walls; to learn to be leaders in the community.

- It is more than social responsibility defined as doing no harm to others in the pursuit of own interest.
- New pluralism requires civic responsibility: giving to the community in the pursuit of own interest.
- This means power, even political power, will be possessed by pluralistic communities.
- Modern social and political theory preaches that there can be only one power in society: a centralized government.

- Society had come to believe that government could and should take care of every problem and every challenge in the community—a thesis 50 years ago was almost universally accepted.
- Trend towards a total monopoly of power by one institutions, the government, dominated in the first half of the 20th century.
- The first new non-government institution was the large business enterprise, made possible by transportation and information technologies.

- Modern society is rapidly increasing pluralism and reversing a trend of the past centuries.
- Single-cause interest groups are dominating the political process and are subordinating the common good to their own values, their own aggrandizement and power.
- The task centered autonomous institutions is the only one that performs in the past 150 years. Whenever an institution goes beyond a narrow focus, it ceases to perform.

- The strength of the modern pluralist organization is that it is a single-purpose institution. A strength that has to be preserved.
- Balancing the common good and the special purpose of the institution is the question that has to be answered if the new pluralism is not going to destroy the community.
- Leadership beyond the walls requires financial, performance, and personal dimensions.

- Multinationals were held together by ownership and had considerable autonomy in different territories.
- Multinationals of the future will be held together and controlled more by strategy, where alliances, joint ventures, minority stakes, know-how agreements and contracts will increasingly be the building blocks of a confederation.
- It will need a new kind of top management.
- The type able to operate in a more pluralistic world.

- Top management may not be an extension of operating management, but a distinct and separate organ that stands for the company, balancing conflicting demands on it: short-term, long-term and from its various constituencies.