

Japan's Growth Strategy

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Outline

- World Economy Now
- The Neoclassical Growth Theory
- Why is the singularity still far away?
- Interpreting Generation Gaps
- Supplement – History of the higher education in Japan

WORLD ECONOMY NOW

Japan against China 1

- Japan's stock market is now in boom:
<https://finance.yahoo.com/quote/%5EN225?p=%5EN225>
- China's stock market has been stagnating not only in Shanghai:
<https://finance.yahoo.com/quote/000001.SS?p=000001.SS>
- but also in Hong-Kong:
<https://finance.yahoo.com/quote/%5EHSI?p=%5EHSI>

Japan against China 2

- The GDP per capita of China has been catching up with Japan in nominal value:
https://ecodb.net/exec/trans_country.php?type=WEO&d=NGD PDPC&s=1980&e=2023&c1=JP&c2=CN&c3=&c4=&c5=&c6=
- In real value denominated in the purchasing power value:
https://ecodb.net/exec/trans_country.php?type=WEO&d=PPP PC&s=1980&e=2023&c1=JP&c2=CN&c3=&c4=&c5=&c6=

Japan against China 3

- The annual nominal growth rate of Chinese economy had been maintained around 10% until 2010.
- Then it has been slowing down to 5% in 2020.
- Chinese economy is expected grow since its GDP per capita is still less than half of Japan.
- https://ecodb.net/exec/trans_country.php?type=WEO&d=NGDP_RPC&s=1980&e=2023&c1=JP&c2=CN&c3=&c4=&c5=&c6=

Recovery of the Japanese economy

- The recent boom in the Japanese equities is driven by five factors:
 1. The dollar-denominated value of the Nikkei Stock Average looks so low to attract foreign investors.
 2. Japan is an alternative investment opportunity to China, which seems to be involved with increasing international tensions.
 3. The latest rises in the prices and wages associated with the expansion of Japan's nominal economy suggest the end of deflation.
 4. The Bank of Japan's monetary policy is expected to show signs of continued easing, which is prompting the "Ueda trade" of buying stocks and selling the yen.
 5. If tax revenues rise as the growth of nominal economy, a slight increase in interest rates will be tolerable for both the government and the BOJ.

China Risk

- As of the “China risk”, international investors carefully avoid Chinese stocks and invest in Japanese equities. Analysts argue that "Markets in 'pro-U.S.' countries, such as Japan, are being favored.
- There are so many negative factors for Chinese stocks, including the risk of sanctions under the U.S.-China conflict, the Taiwan issue, and the increasing control of giant IT (information technology) companies like Alibaba.
- The golden age of Chinese economy seems to have passed due to the population aging.

International Currency

- The latest rise in Japan's trade account deficit has been caused by the unexpected devaluation of Japanese Yen in 2022, following the world-wide inflation and the energy price hike associated with Russia's invasion to Ukraine.
- Japan's trade deficit is driven partly by the fact that the prices of Japan's exports and imports are denominated in US dollar, not in Japanese Yen.
- Japan imports an enormous amount of natural gas and fuels, of which the price is determined by international markets out of Japan's control.

Shares of domestic currency in trade

- Japan's exports are priced in Yen by 40%, in U\$ by 50%
- More than 70% of Japan's imports are denominated in U\$.
- More than 70% of both exports and imports of Germany, France, and Italie are denominated in Euro.
- More than 95% of both exports and imports of the US are denominated in U\$, which is the international currency.
- Japan's latest rise in trade deficit is caused partly by the sudden appreciation of U\$.
- The latest sanctions on China and Russia has induced them to use Chinese Yuan for trade settlement, weakening the role of U\$ as the unique international currency.

THE NEOCLASSICAL GROWTH THEORY

Neoclassical Growth Theory

- Production Function: Output is produced by technology (A), capital (K) and labor (L).
- With the labor-augmenting technological progress, we can write: $g_Y = g_A + \gamma g_K + (1 - \gamma)g_L$, where
 - g_Y : growth rate of GDP
 - g_A : growth rate of technological progress
 - g_K : growth rate of capital
 - g_L : growth rate of labor
 - γ : capital's share, usually assumed to be .3

What is labor productivity?

- In terms of GDP per capita: $g_{Y/L} = g_A + \gamma g_{K/L}$, where
 - $g_{Y/L}$: growth rate of GDP per capita
 - $g_{K/L}$: growth rate of capital/labor ratio, which eventually converges to zero as time goes on
- (Convergence Hypothesis) In the long-run, $g_{Y/L}$, the growth rate of GDP per capita converges to g_A , the growth rate of technological progress.
- Y/L is also called labor productivity. Then $g_{Y/L}$ is the growth rate of labor productivity.

Skills and Trainings

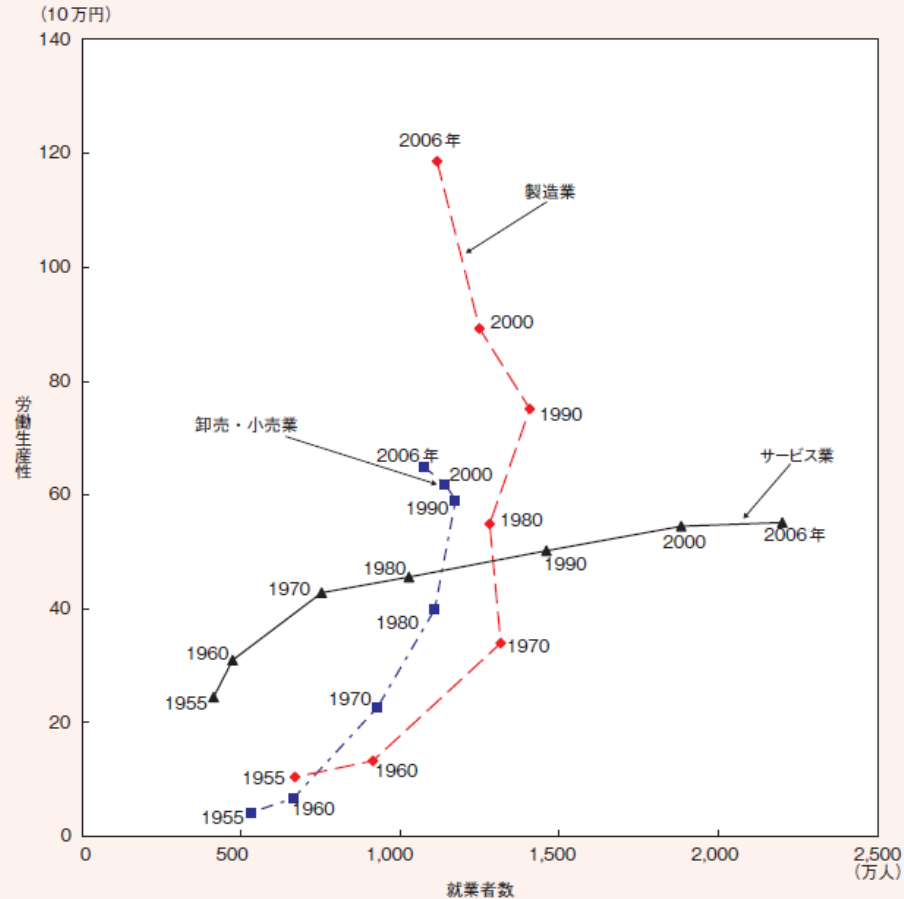
- Firm-specific skills: skills useful only for the workers to work for that firm.
- General skills: skills useful not only for the workers to work for that firm but also for the workers to work for other firms.
- Industry-specific skills: skills useful for that specific industry
- Training to acquire general skills are not provided at the employer's expense.
- Liquidating the labor market might reduce the level of general skills of the economy.

Creative Destruction

- Schumpeter argues that recession may improve productivity by destroying jobs with low productivity and replace them with those with higher productivity.
- Creative Destruction works if technology or skill is embodied with employment, and a new skill is acquired only with new employment.
- A question emerges: Is technology complimenting or substituting to employment?
- If creative destruction were true, then higher labor productivity would be associated with higher unemployment.
- However, there are few empirical supports for creative destruction, suggesting that technology compliments employment.

An Inconvenient Truth: Employment grows more in growth-stagnant sectors

第3 - (3) - 2図 就業者数と労働生産性の推移



資料出所 内閣府「国民経済計算」をもとに厚生労働省労働政策担当参事官室にて推計
(注) 1) 労働生産性は実質国内総生産(産業別)を就業者数(産業別)で除したものとした。
2) 2000年基準の値(実質・固定基準年方式)に過去の指数を接合して廻り系列とした。

Employment in manufacturing sectors grew in accordance with productivity growth until 1990, and it slowed down since then.

Employment is growing at the fastest in service industries where productivity grows at the slowest.

Food and restaurant industries grew in the last century but it is stagnant now.

http://www.mhlw.go.jp/wp/hakusyoro/roudou/08/dl/03_0003.pdf

What is growth strategy?

- It is to design institution and infrastructure to maximize our potential GDP.
- Japan has a very strong reputation in the intermediate products, which are essential to the industries making high-quality final products, such as the Boeing aircrafts and Apple computers.
- Even though many leading final goods manufacturers like SONY and Panasonic have lost competence in the global market, Japan exports many intermediate products to the world.

Value-adding Innovation?

- Many experts argue that future developments of the manufacturing industries are limited, while service industries have relatively high potentials to bring innovation.
- Foreign visitors are often amazed by Japan's local restaurants to provide high quality dining at surprisingly affordable prices.
- But the restaurant industry does not create high value-added. and is notorious for its low working condition and cheap pays.
- Shifting from manufacturing to service is expected to create more employment at low paid jobs.
- Therefore, service sectors like restaurants and tourism would not drive economic growth.

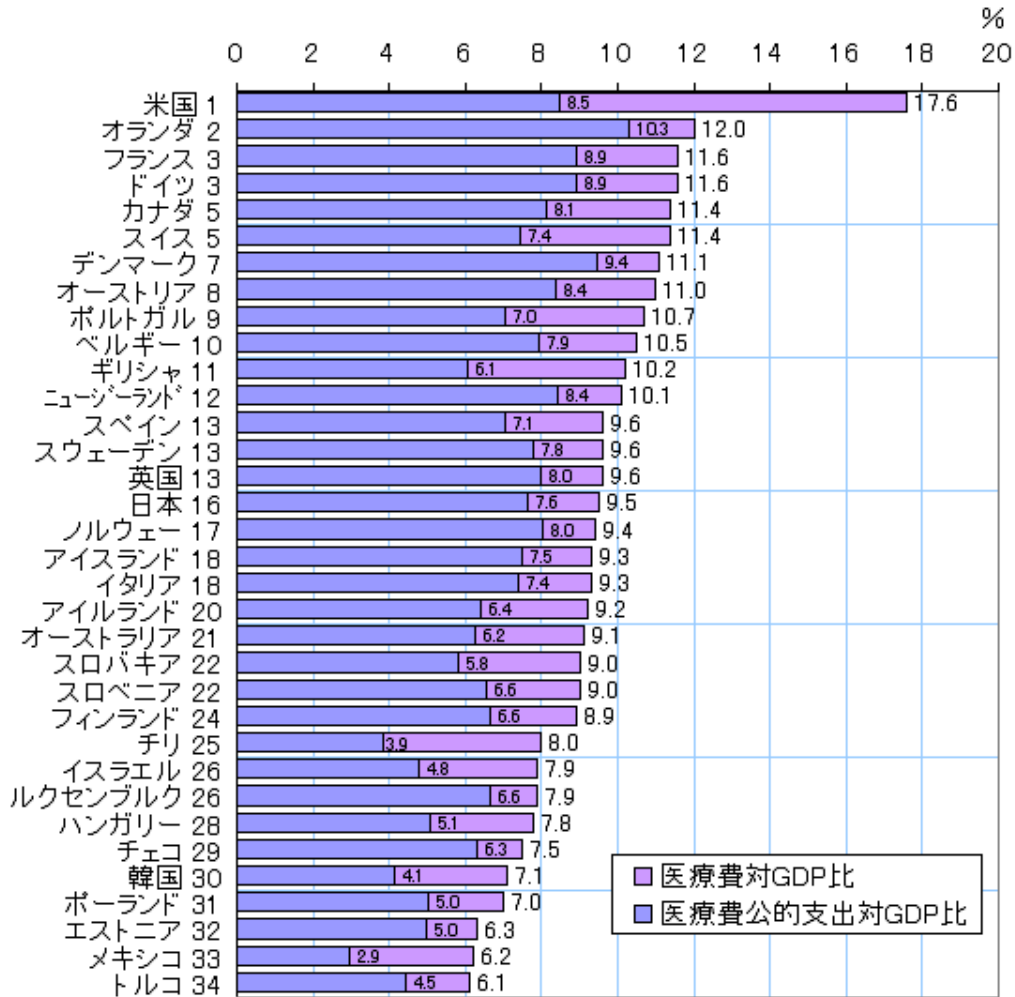
Attractive new products?

- Some other experts argue that Japan should create new products and services that attract global consumers.
- Apple computers, Google, Microsoft, amazon.com, Starbucks coffee, and others, were founded in the US.
- However, these international companies do not always create employment or [bring tax revenues](#) to the US.

High value-adding sectors?

- In the US, medical care and university education are creating enormously high value-added.
- However, high value-added service is associated with high costs: the US people are forced to pay extremely high medical care costs and university education costs.

OECD諸国の医療費対GDP比率(2010年)



- The US medical care costs amount to 18% of its GDP.
- Only half of the total costs are subsidized by the government.
- The US experts always argue that they need to reduce its high medical care cost, which is the reverse side of the high value-added in the medical sector.

(注) スペイン、日本、オーストラリア、イスラエル、ルクセンブルクは2009年データ、トルコは2008年データ。公的支出対GDPは公的割合から算出。

(資料) OECD Health Data 2012 (28 June)

<http://www2.ttcn.ne.jp/honkawa/1890.html>

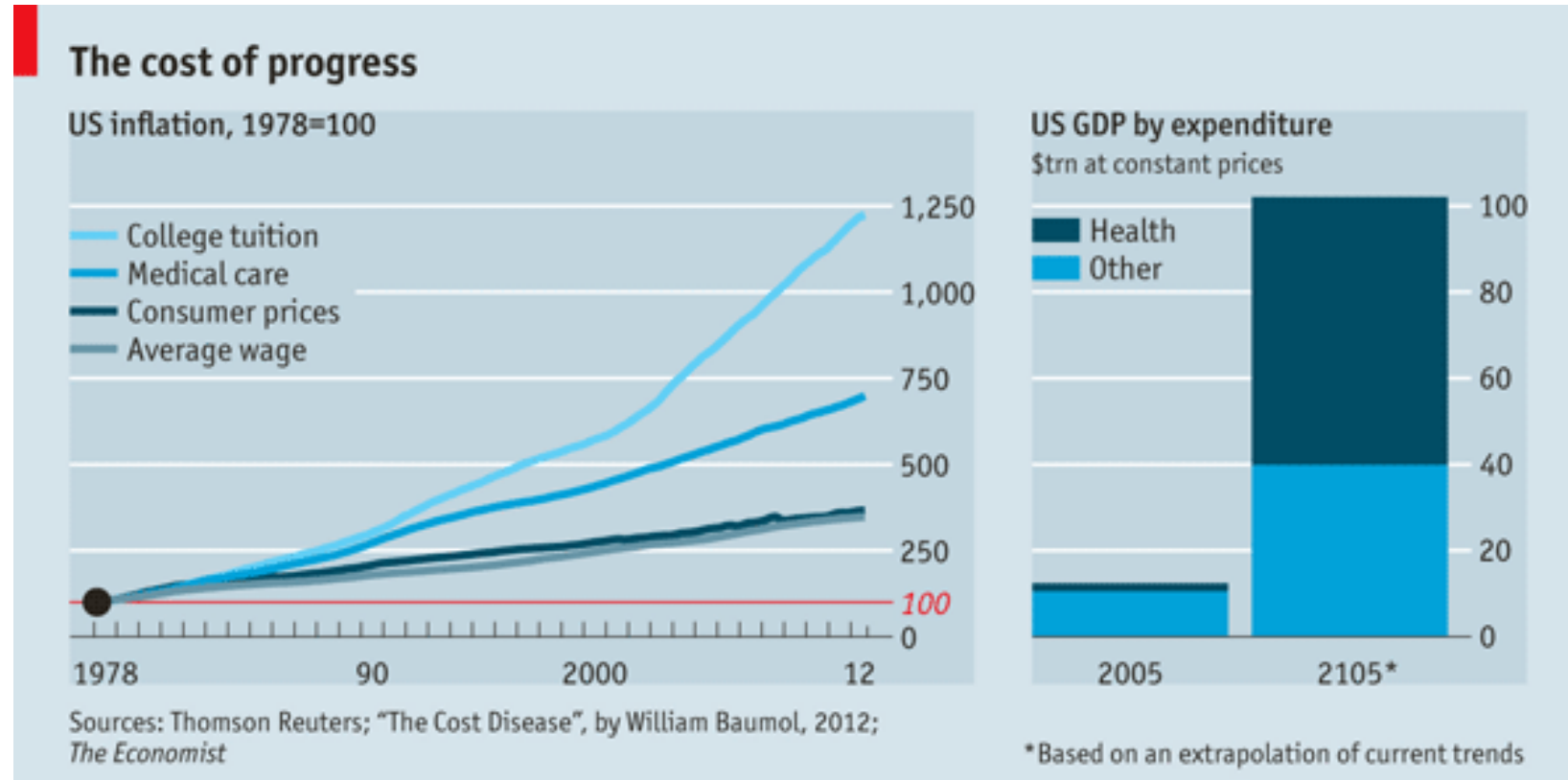
WHY THE SINGULARITY IS STILL SO FAR AWAY?

The Baumol's Cost Disease

- The rise in the relative costs of the “stagnant” slow productivity growth sectors inevitably outpace those of the fast productivity growth sector.
 - Stagnant sectors: medical care, education, performing arts
 - Fast productivity growth sector: information technology, machineries, automobiles.
- Privatization (switch from public to private sectors) will not cure the underlying disease.
- Economic growth still enables people to afford them, even with the spiraling costs of education and medical care.

Baumol's Cost Disease

- Since the 1980s the price of university education in America has risen by 440% and the cost of medical care by 250%. For the economy as a whole, the average increases in price and wage were only 110% and 150% respectively
- America's health-care spending as a share of GDP, for instance, is growing by around 1.4% a year. If it continued to expand at this rate for a century, it would rise to that eye-popping figure of 60% in 2105.

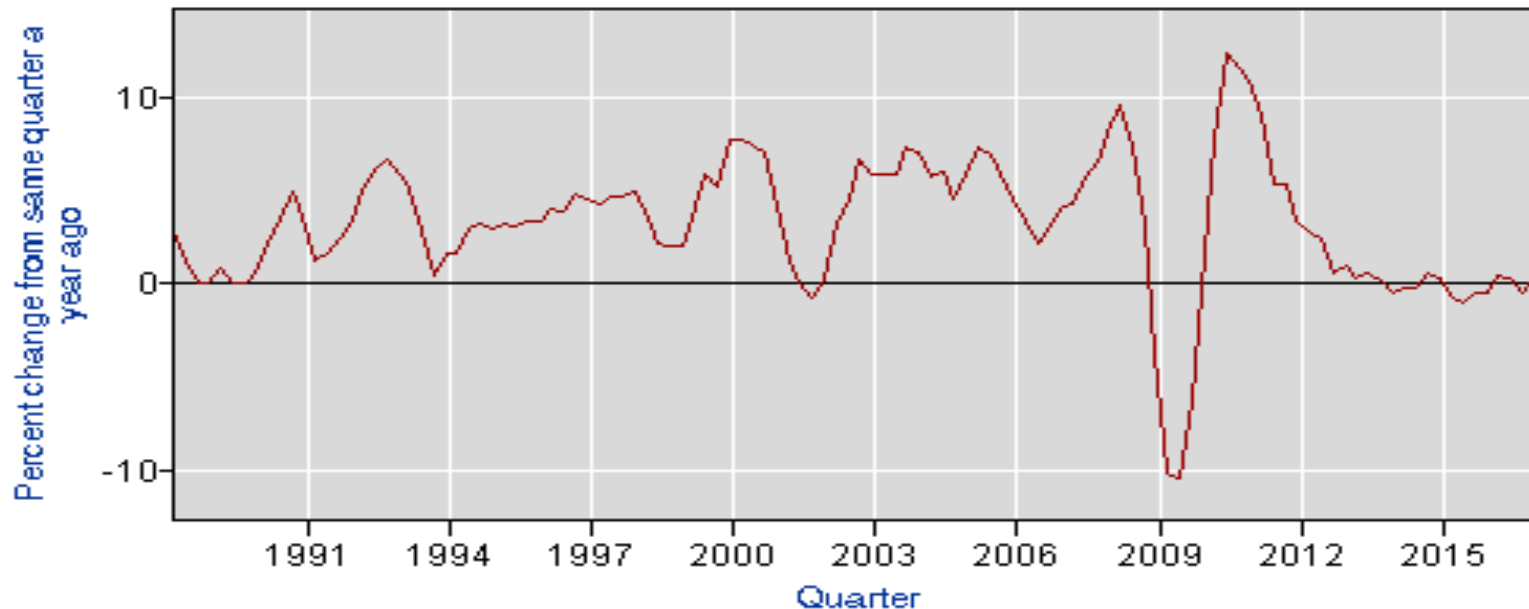


<http://www.economist.com/node/21563714>

What is the Singularity?

- Information technology would eventually replace human works with machines.
- War of human beings against robots (Terminator).
- Kurzweil and other futurologists predict that Singularity will come around 2040.
- If labor is replaced with machines, labor productivity would rise.
- Today, however, labor productivity is stagnating.
- The only evidence that is consistent with the Singularity is the reduction in the labor share of GDP.

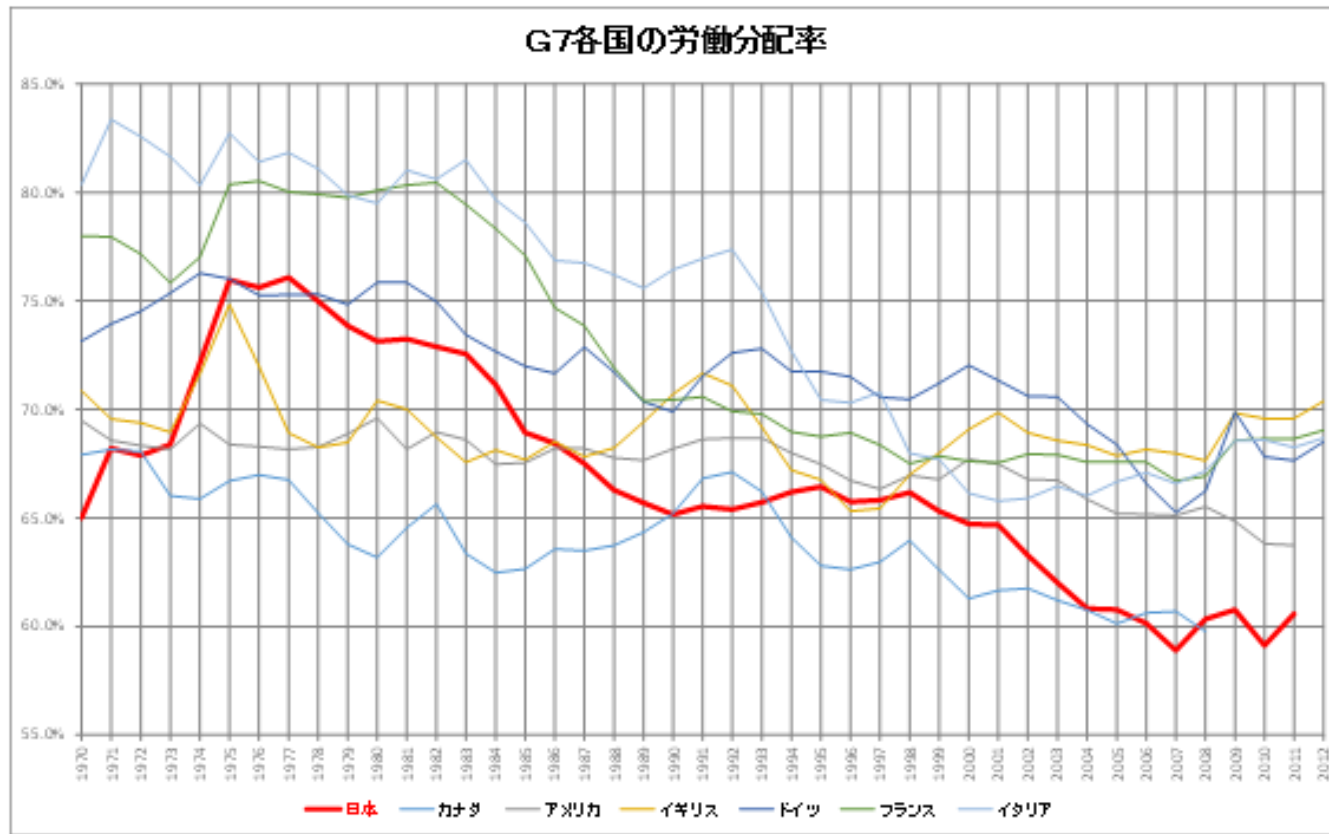
Where is the productivity growth?



<http://cepr.net/blogs/beat-the-press/where-s-the-productivity-growth-the-bureau-of-labor-statistics-can-t-find-the-robots>

- It is widely argued that AI will eventually replace labor with machines, and the Singularity is approaching.
- In reality, however, there is no strong evidence that shows high productivity growth.
- Why labor productivity rises in 2010?

Labor share is declining in G7 economies



【出所】“Unit Labor Costs-Annual Indicators: Labor Income Share Ratios” OECD statistics データより中西健治事務所作成

平成 29 年 4 月 13 日 参議院 財政金融委員会 自由民主党・こころ 中西健治

Japan's labor share has been declining in the latest decades and its level is the lowest among G7 economies.

Does firms in Japan use more information technology than other G7 economies? – probably not.

Why the Baumol disease occur? 1

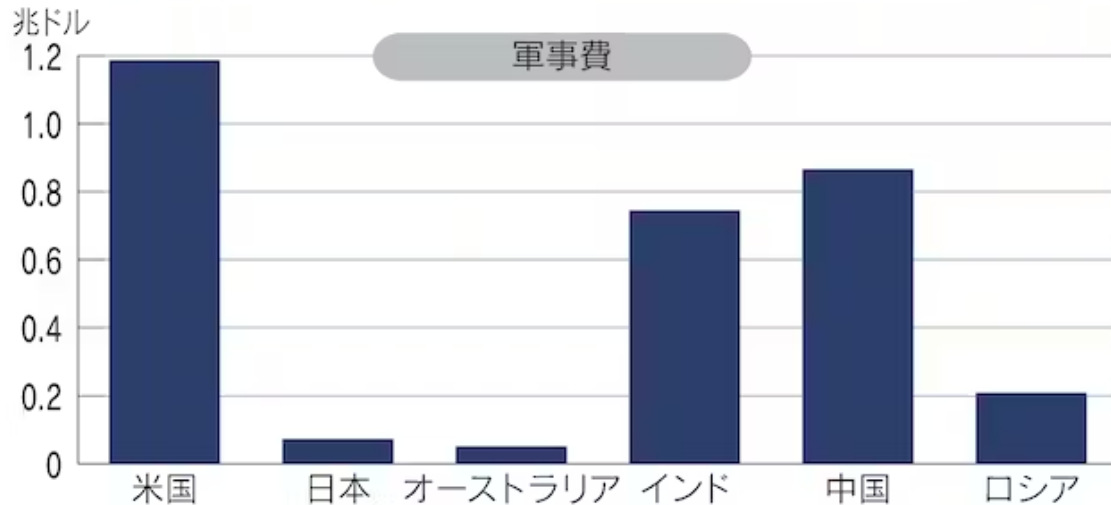
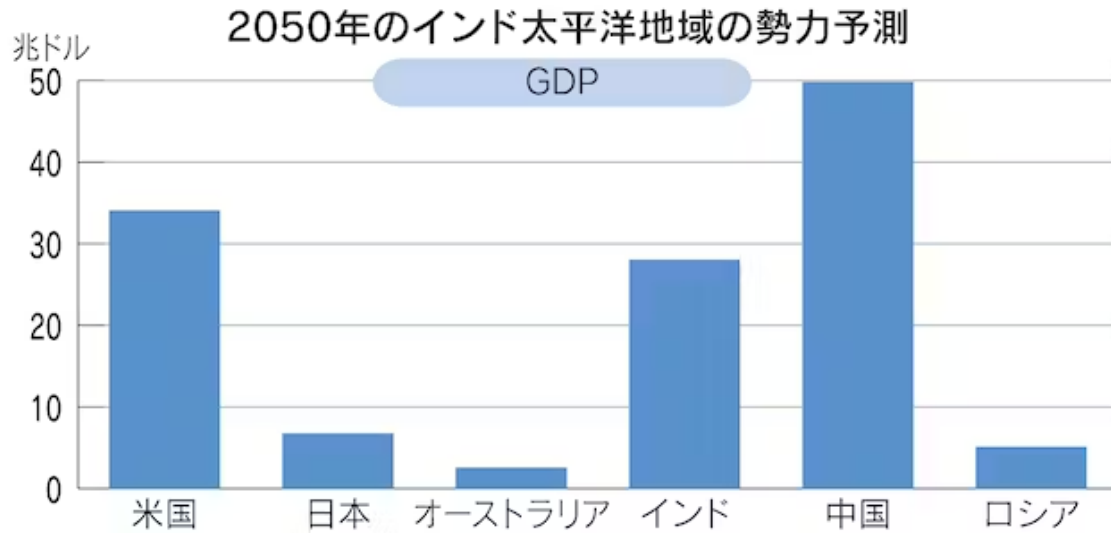
- We need to explore the impacts of technological progress on the demand side as well as on the supply side.
- Supply side: Technological progress reduces the relative price of capital to labor, and replaces labor with capital in production, not by so much as the factor price change.
 - In other words, the substitution elasticity is less than one in production.

Why the Baumol disease occur? 2

- Demand side: Technological progress reduces the relative price of capital-intensive goods to labor-intensive goods, and consumers' demand shifts from the latter to former.
 - However, the expenditure share for capital-intensive goods decreases, while the expenditure share for labor-intensive goods increases.
 - In other words, the substitution elasticity is less than one in consumption.
- If the substitution elasticity is less than one in both consumption and production, the Baumol disease occurs.

Intuition for the Baumol Effect

- Consider a consumer who recognizes a reduction in the TV price. Does she buy more TVs?
- Probably no. She would buy other goods.
- Consumers tend to save money by reducing her expenditure share for the goods of which the price decreases, in order to buy other goods.
- Economic growth tends to reduce the relative price of goods to services, and raises the expenditure share for services. This is the Baumol effect.
- (Nordhaus) The Singularity is still far away because the expenditure share for capital-intensive goods is not growing.



(出所) PwC「The World in 2050」を基に筆者作成。軍事費はストックホルム国際平和研究所 (SIPRI) データベースの2021年のGDP比を基に算出

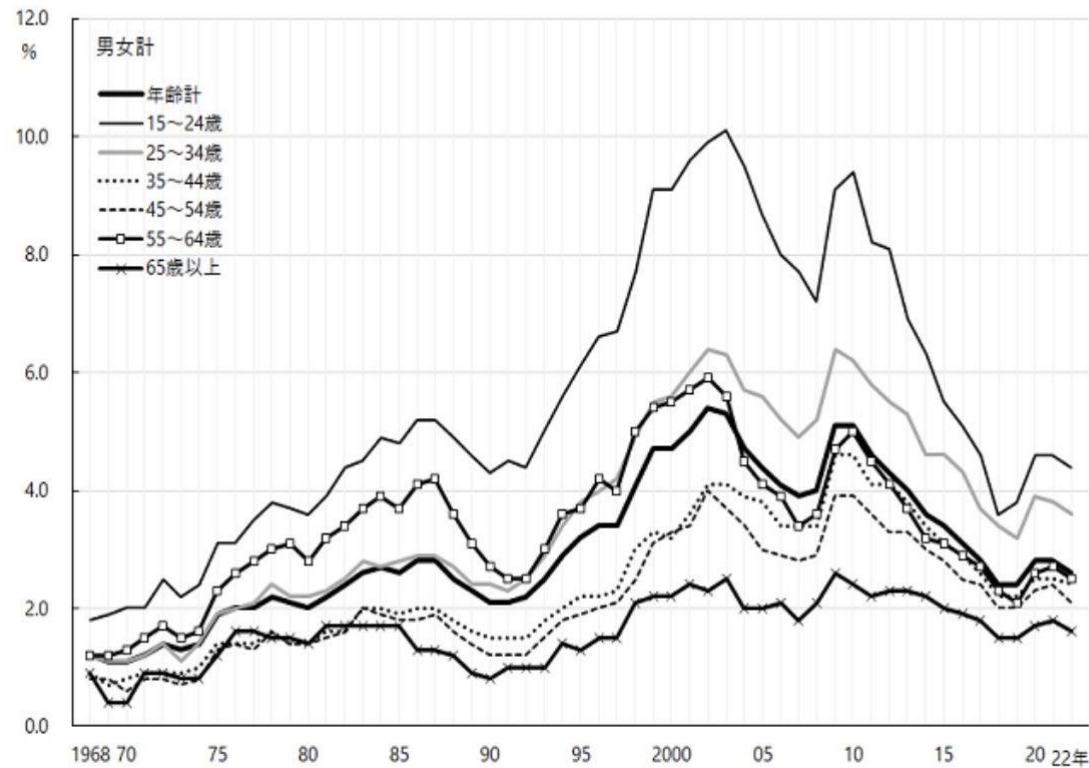
Power Balance in Indo-Pacific Region in 2050

- Another inconvenient truth will be revealed around 2050s.
- In economy, China will overwhelm the USA.
- Japan's GDP will be less than 20% of China.
- The hegemony shift from US to China will occur because, although any country can copy AI and information technology, the population gap cannot be reversed.
- If AI eventually replaces labor, why US cannot beat China?
- The hegemony shift will betray the singularity myth.

INTERPRETING GENERATION GAPS

Unemployment Rate

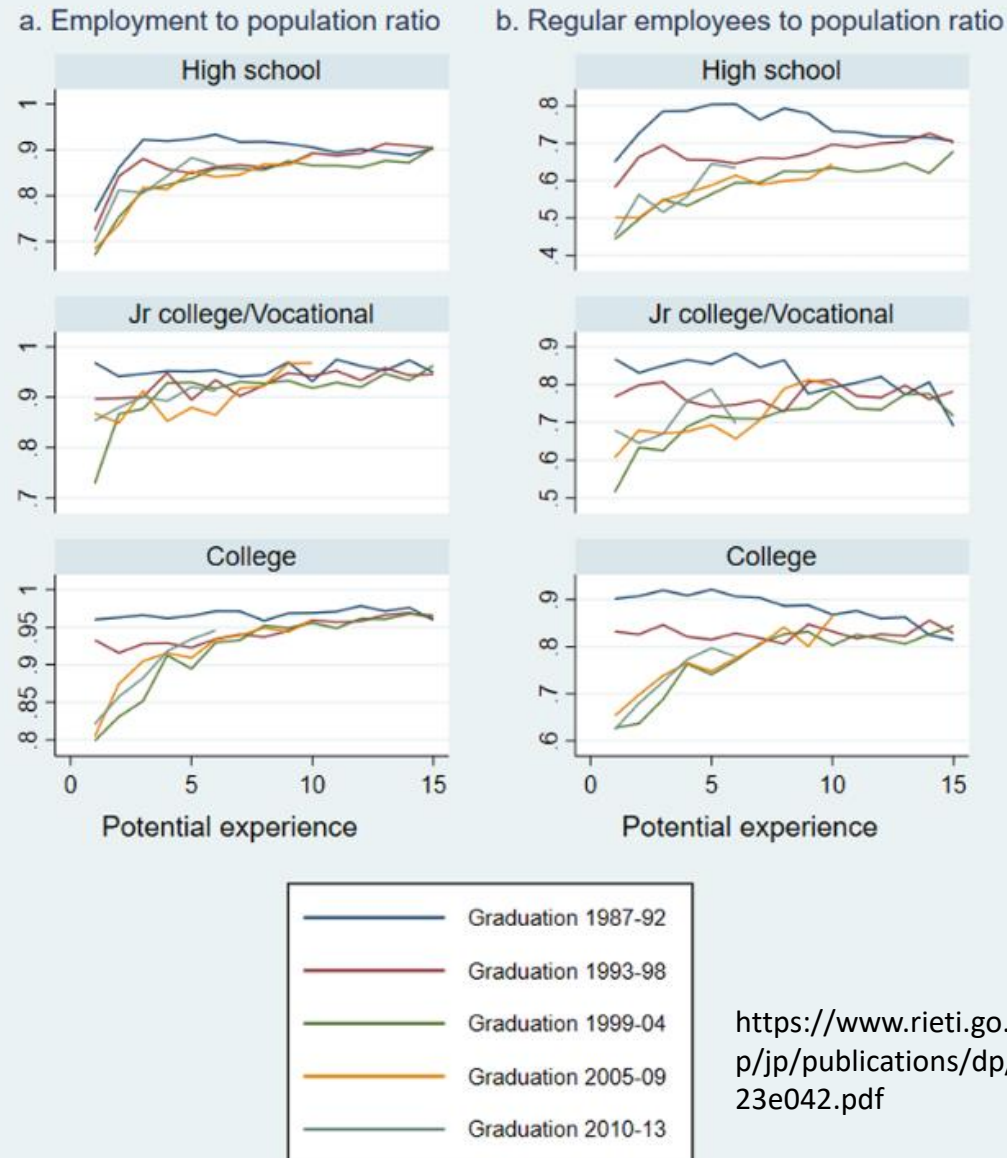
図3-2-1 年齢階級別完全失業率 男女計 10歳階級 1968年～2022年
年平均



- The youth unemployment rate was 6 to 10 percent for the age groups of graduation 1995-2013, while it was less than 6% for the age groups of graduation before 1995 and after 2013.
- The young people graduating from schools in 1995-2013 can be called as the “lost generation” in a broader sense.

Experience Profile

Figure 2. Potential experience profiles by cohort group



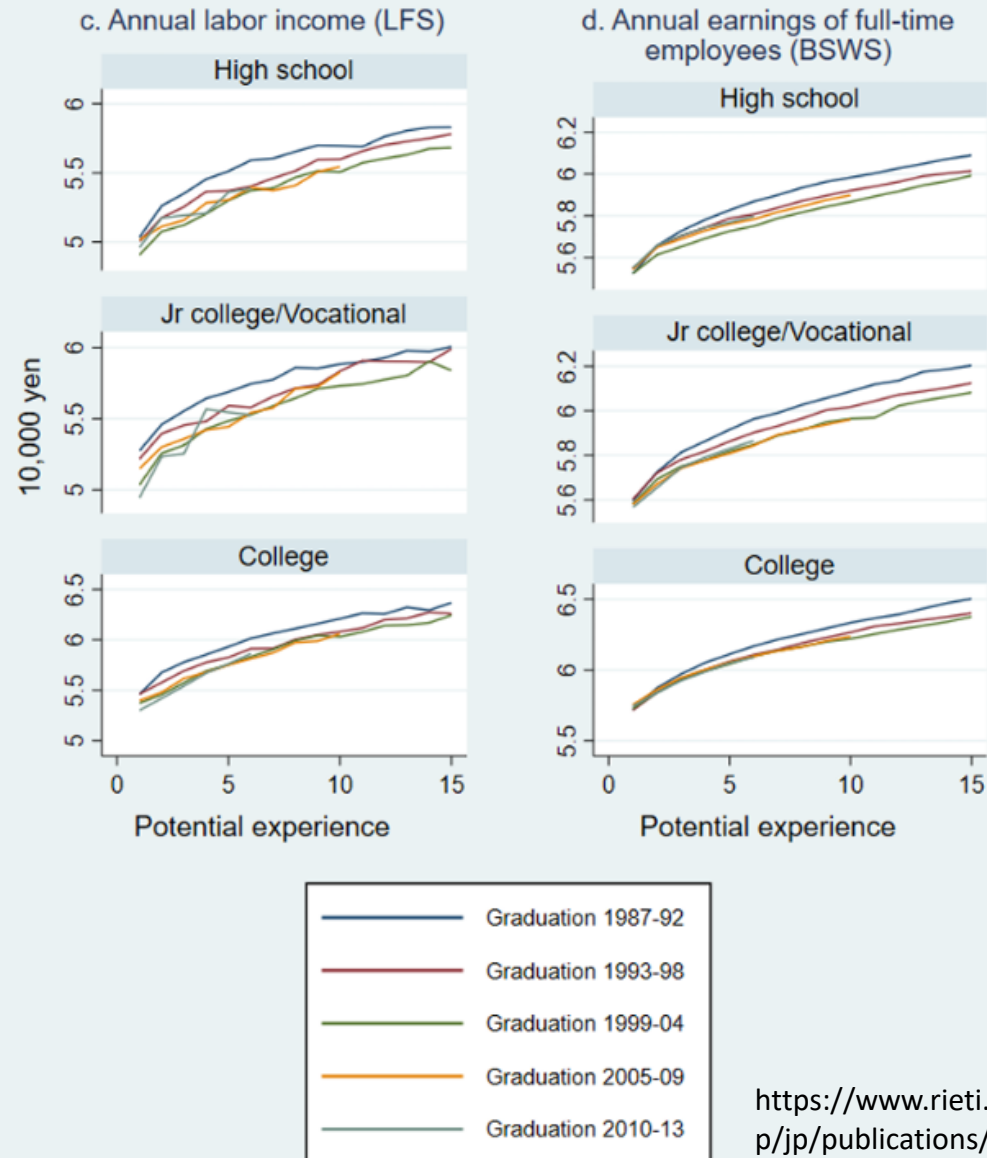
Employment to population rate :

- There is little generation gap for high school graduates.
- There are significant generation gaps for vocational/college graduates.

Regular employees to population ratio:

- There are significant generation gaps for the early periods after graduation.
- After 15 years have passed, there is no big difference across generations.

Figure 2. Potential experience profiles by cohort group



Annual Earning Profile

Annual labor income taken from LFS (Labor Force Survey):

- The older generations seem to acquire higher earnings than the younger generations.

Annual earnings of full-time employees taken from BSWS (Basic Survey of Wage Structure):

- Similar earning profiles are observed across generations, while the older generations earn more than the younger ones.

Interpretation

- The youth unemployment rate was 6 to 10 percent for the age groups of graduation 1999-2013, while it was less than 6% for the age groups of graduation before 1999 and after 2013.
- There is a significant career or experience gap between the age group of graduation 1987-1998 and the age group of graduation 1999-2013.
- Many people of the latter group started their vocational career as non-regular status, while there is no big gap in their earning profile, although earlier generations earned more than the later generations.

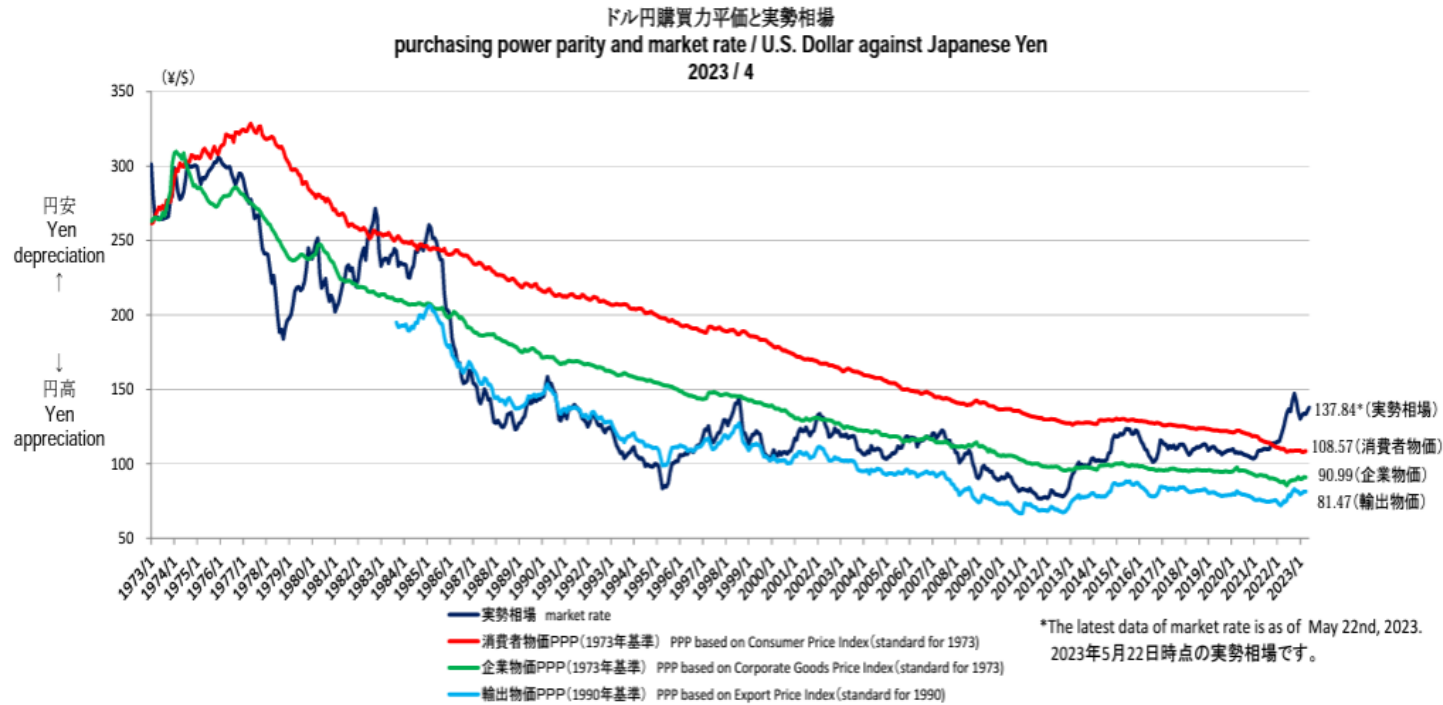
Macroeconomy Does Matter

- The over valuation of Japanese Yen for 1985-2012 might have caused the long slump of the Japanese economy and created the “lost generation”.
- The Yen was so strong to induce Japanese firms to stop business and investment within Japan and move the factories abroad (USA, China, and East Asia).
- The current under-shooting of the Yen has created an unexpected boom in domestic investment and an appreciation of share values of the TSE.

The Latest Under-Shooting of the Yen



公益財団法人 国際通貨研究所



<https://www.iima.or.jp/research/ppp.html>

Indigo: Market Value of Yen

Red: PPP by CPI

Green: PPP by wholesale price

Blue: PPP by import price

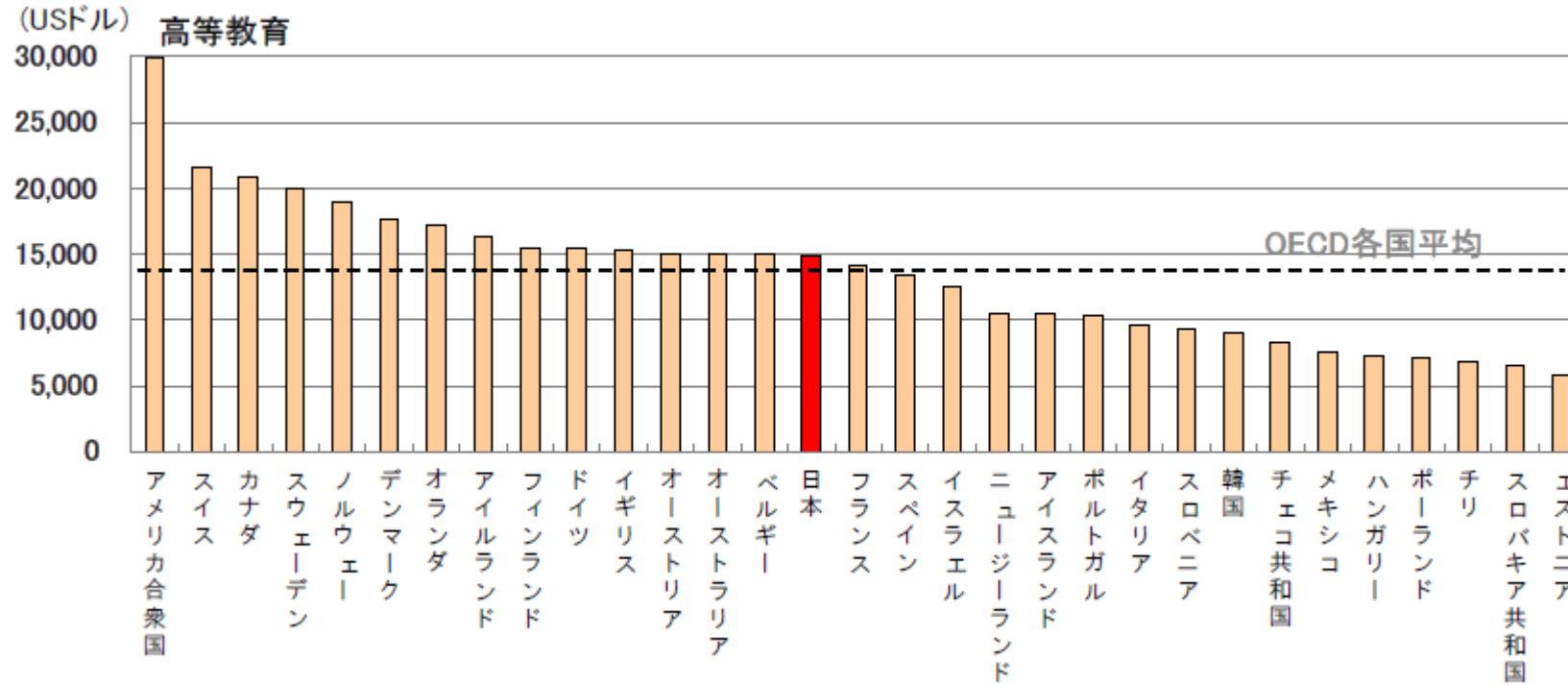
The Yen was appreciating the U\$ for 1985 to 2012.

It started to devalue in 2013 and broke the upper bound (Red) in 2022.

Supplement

HISTORY OF THE COSTS OF HIGHER EDUCATION IN JAPAN

University education costs per person



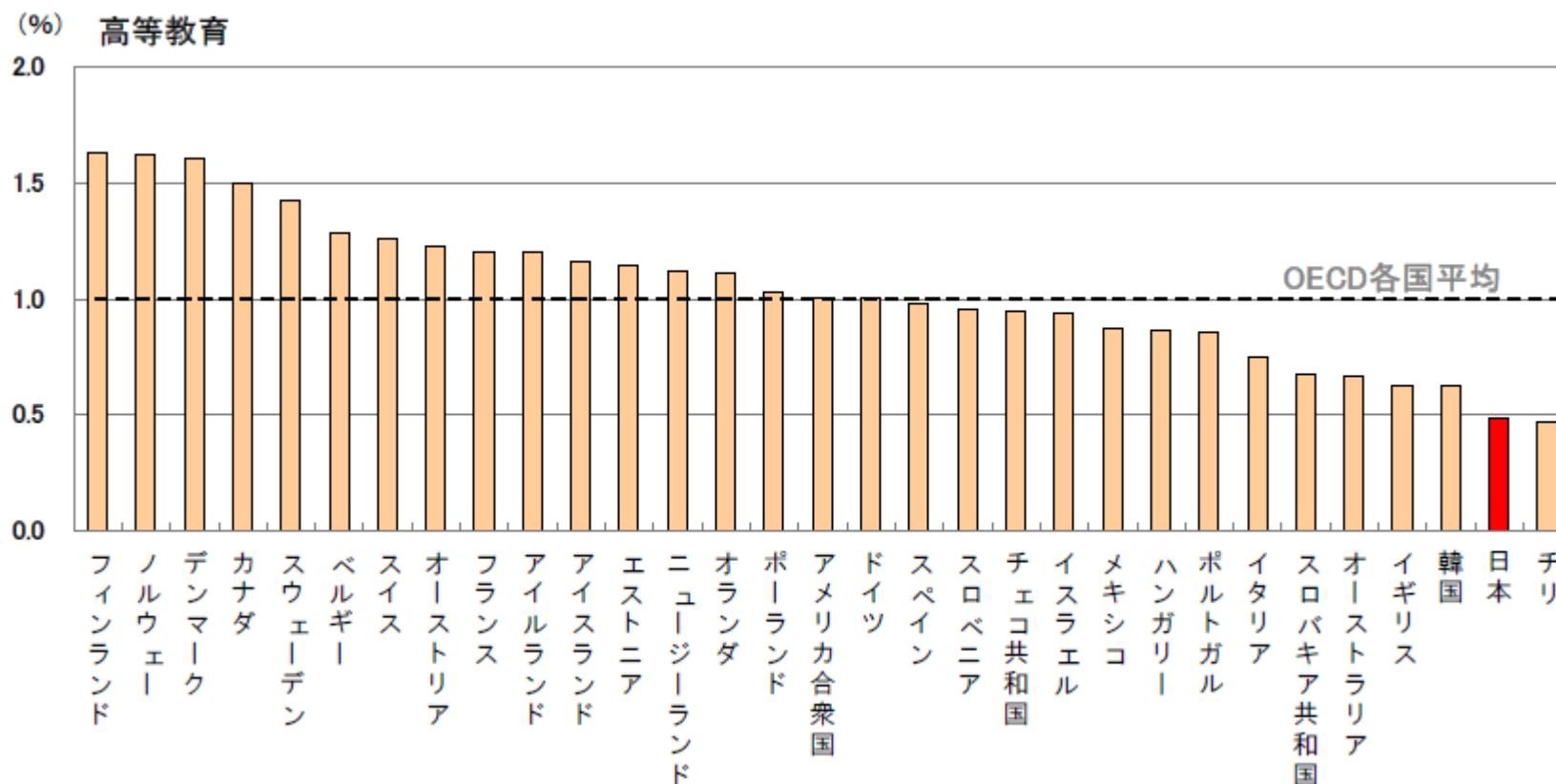
http://www.mext.go.jp/b_menu/shingi/chukyo/chukyo0/gijiroku/___icsFiles/afieldfile/2011/10/07/1311502_8_1.pdf

Education costs in US\$

【教育段階別】	(USドル)	
	初等中等教育	高等教育
日本	8,301	14,890
韓国	6,723	9,081
アメリカ合衆国	10,995	29,910
イギリス	9,169	15,310
フランス	8,559	14,079
ドイツ	7,859	15,390
OECD各国平均	8,169	13,717

http://www.mext.go.jp/b_menu/shingi/chukyo/chukyo0/gijiroku/__icsFiles/afieldfile/2011/10/07/1311502_8_1.pdf

Public subsidy to university education in the share of GDP



http://www.mext.go.jp/b_menu/shingi/chukyo/chukyo0/gijiroku/___icsFiles/afieldfile/2011/10/07/1311502_8_1.pdf

Public and private costs of university education

【高等教育】 (%)

	公財政	私費負担	合計
日本	0.5	1.0	1.5
韓国	0.6	1.9	2.6
アメリカ合衆国	1.0	1.7	2.7
イギリス	0.6	0.6	1.2
フランス	1.2	0.2	1.4
ドイツ	1.0	0.2	1.2
OECD各国平均	1.0	0.5	1.5

http://www.mext.go.jp/b_menu/shingi/chukyo/chukyo0/gijiroku/_icsFiles/afieldfile/2011/10/07/1311502_8_1.pdf

Higher Education in Japan and US

- In Japan, higher education costs account for 1.5% of GDP, while it accounts for 2.7% in the US.
- Higher education creates more value-added in the US than in Japan.
- If Japanese people pay university costs as much as the US people, Japan can increase the value-added of the education sector.
- However, high value-added does not always imply high quality.
- Raising higher education costs would be a plausible growth strategy.
- However, the majority of Japanese people would not support this idea.

Who should pay university tuitions?

- Japan has always spent too little public money on higher education. The reason why Japan has mainly private universities is because of the low public spending.
- However, we can't go along with the anti-austerity advocates who try to rely on unstable financial resources such as "issue government bonds to pay for higher education.
- Higher taxes or social insurance are necessary.
- However, running universities with public funds is a redistribution from the economically weak to the strong.

University Tuition and Income Distribution

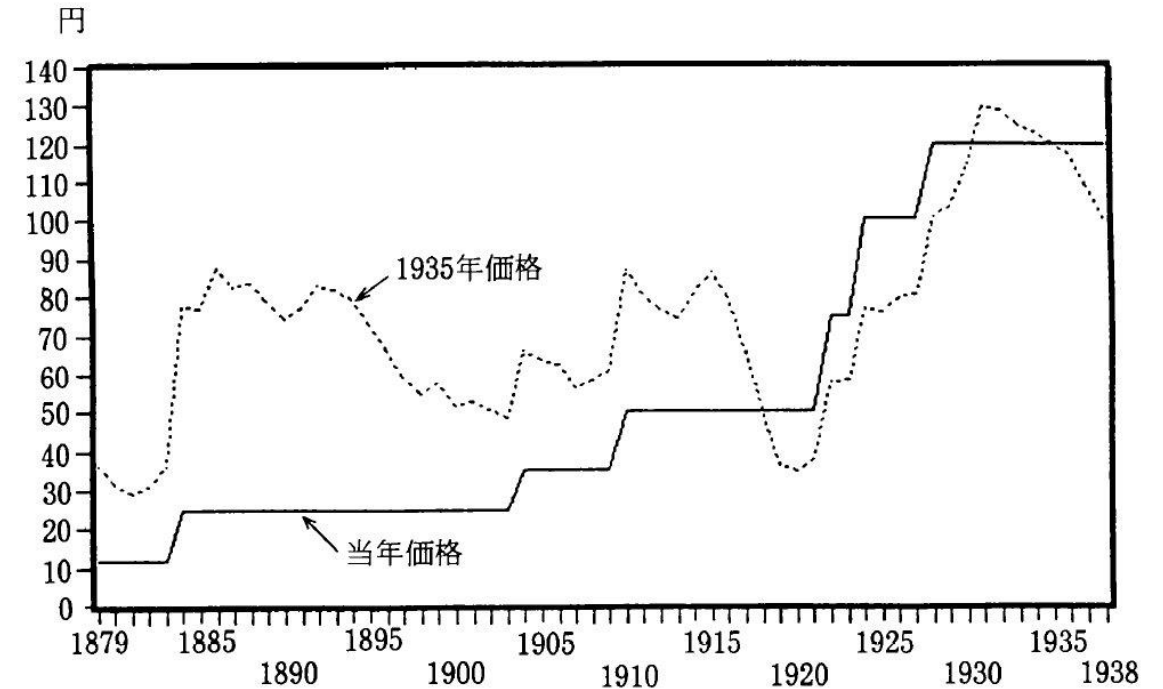
- If the actual cost of higher education is charged, children from low-income families will not be able to go to college.
- On the other hand, the rate of return on a college degree is sufficiently high that lowering the cost of higher education at public expense would result in income redistribution from the economically weak to the strong.
- Therefore, it would be fair to support them with scholarships or education loans.

Middle School Tuition in Prewar Japan

- Before the WWII, going to an old middle school (prefectural school) was quite a heavy burden for the average family.
- For example, in Tokyo Prefecture, the annual tuition was 27 yen for an income of 1,006 yen. To put the scale in today's terms, the tuition is 135,000 yen for an income of 5 million yen.
 - annual https://www.jstage.jst.go.jp/article/csssej/1/0/1_31/_pdf/-char/en

Tuition Fees of National Universities in Prewar Time

- In 1916, but pre-war tuition at national universities was 50 yen. Based on an income of 5 million yen, that would be 250,000 yen.
- This may sound manageable, but this is for income tax payers.
- Pre-war national universities probably charged tuition fees comparable to today's private universities.



出所：〔文部省年報各年版〕, 〔週刊朝日編, pp.436, 446, 453〕,
〔日本統計年鑑, 各年〕, 〔大川一司1967, p.134〕から推計

図1 国立大学授業料の変せん 戦前 (1879-1938年)

<https://rihe.hiroshima-u.ac.jp/search/attachfile/49056.pdf>

Postwar Change

- National University Tuition drastically decreased in the postwar Japan.
- The ratio of university tuition to GNP per capita:
 - .67 in 1890s,
 - .52 in 1930s
 - .03 in 1960s

表2 国立大学授業料と、国民一人あたり消費支出とGNP

— 戦 前 —

期 間	国立大学 授 業 料 (円) (1)	一 人 当 り 消 費 支 出 (円) (2)	一 人 当 り G N P (円) (3)	比 (1)/(2)	比 (1)/(3)
1886-89	25.0	17.5	22.1	1.43	1.13
1890-99	25.0	29.3	37.2	0.85	0.67
1900-09	31.0	49.9	66.1	0.62	0.47
1910-19	50.0	93.4	131.2	0.54	0.38
1920-29	89.0	203.2	269.2	0.44	0.33
1930-35	120.0	164.3	229.5	0.73	0.52

出所：図1に同じ

表3 国立大学授業料と、国民一人あたり消費支出とGNP

— 戦 後 —

期 間	国立大学 授 業 料 (円) (1)	一 人 当 り 消 費 支 出 (千円) (2)	一 人 当 り G N P (千円) (3)	比 (1)/(2)	比 (1)/(3)
1955-69	7200	76	121	0.09	0.06
1860-69	11100	194	349	0.06	0.03
1970-79	64800	718	1275	0.09	0.05
1980-84	208800	1337	2266	0.16	0.09

出所：図1に同じ

年度	国立大学			私立大学			私立大学/国立大学		
	授業料(円)	入学料(円)	検定料(円)	授業料(円)	入学料(円)	検定料(円)	授業料(倍)	入学料(倍)	検定料(倍)
昭和50年	36,000	50,000	5,000	182,677	95,584	9,647	5.1	1.9	1.9
昭和51年	96,000	50,000	7,500	221,844	121,888	11,452	2.3	2.4	1.5
昭和52年	96,000	60,000	7,500	248,066	185,205	13,084	2.6	2.3	1.7
昭和53年	144,000	60,000	10,000	286,568	157,019	14,722	2	2.6	1.5
昭和54年	144,000	80,000	13,000	325,198	175,999	16,302	2.3	2.2	1.3
昭和55年	180,000	80,000	15,000	355,156	190,113	17,995	2	2.4	1.2
昭和56年	180,000	100,000	15,000	388,253	201,611	19,293	2.1	2	1.3
昭和57年	216,000	100,000	17,000	406,261	212,650	20,398	1.9	2.1	1.2
昭和58年	216,000	120,000	17,000	433,200	219,428	21,016	2	1.8	1.2
昭和59年	252,000	120,000	19,000	451,722	225,820	21,019	1.8	1.9	1.2
昭和60年	252,000	120,000	19,000	475,325	235,769	22,854	1.9	2	1.2
昭和61年	252,000	150,000	21,000	497,826	241,275	24,016	2	1.6	1.1
昭和62年	300,000	150,000	21,000	517,395	245,263	24,686	1.7	1.6	1.2
昭和63年	300,000	180,000	23,000	539,591	251,124	25,573	1.8	1.4	1.1
平成元年	339,600	185,400	23,000	570,584	256,600	26,608	1.7	1.4	1.2
平成2年	339,600	206,000	25,000	615,486	266,603	28,166	1.8	1.3	1.1
平成3年	375,600	206,000	25,000	641,608	271,151	29,258	1.7	1.3	1.2
平成4年	375,600	230,000	27,000	668,460	271,948	30,228	1.8	1.2	1.1
平成5年	411,600	230,000	27,000	688,046	275,824	31,005	1.7	1.2	1.1
平成6年	411,600	260,000	29,000	708,847	280,892	31,973	1.7	1.1	1.1
平成7年	447,600	260,000	29,000	728,365	282,574	32,645	1.6	1.1	1.1
平成8年	447,600	270,000	31,000	744,733	287,581	33,171	1.7	1.1	1.1
平成9年	469,200	270,000	31,000	757,158	288,471	33,410	1.6	1.1	1.1
平成10年	469,200	275,000	33,000	770,024	290,799	33,648	1.6	1.1	1
平成11年	478,800	275,000	33,000	783,298	290,815	33,727	1.6	1.1	1
平成12年	478,800	277,000	33,000	789,659	290,691	33,773	1.6	1	1
平成13年	496,800	277,000	33,000	799,973	286,528	33,725	1.6	1	1
平成14年	496,800	28,2000	33,000	804,367	284,828	33,537	1.6	1	1
平成15年	520,800	28,2000	33,000	807,413	283,306	33,106	1.6	1	1
平成16年	520,800	28,2000	33,000	817,952	279,794	32,800	1.6	1	1
平成17年(案)	535,800	28,2000	33,000						

National VS Private

- Since the end of World War II, the tuition ratio between national universities and private universities has been surprisingly stable at around 1.6 times recently.
- It seems that tuition fees at national universities could be raised even more.
- However, when national universities raise tuition, private universities also raise tuition, so it may be the private universities that are creating the gap between national and private universities.

国公立大学の授業料等の推移

年度	国立大学		公立大学		私立大学	
	授業料	入学料	授業料	入学料	授業料	入学料
	円	円	円	円	円	円
昭和 50	36,000	50,000	27,847	25,068	182,677	95,584
51	96,000	↓	66,582	74,220	221,844	121,888
52	↓	60,000	78,141	80,152	248,066	135,205
53	144,000	↓	110,691	90,909	286,568	157,019
54	↓	80,000	134,618	104,091	325,198	175,999
55	180,000	↓	157,412	119,000	355,156	190,113
56	↓	100,000	174,706	139,118	380,253	201,611
57	216,000	↓	198,529	150,000	406,261	212,650
58	↓	120,000	210,000	167,265	433,200	219,428
59	252,000	↓	236,470	178,882	451,722	225,820
60	↓	↓	250,941	179,471	475,325	235,769
61	↓	150,000	252,000	219,667	497,826	241,275
62	300,000	↓	290,400	230,514	517,395	245,263
63	↓	180,000	298,667	261,639	539,591	251,124
平成 元	339,600	185,400	331,686	268,486	570,584	256,600
2	↓	206,000	337,105	287,341	615,486	266,603
3	375,600	↓	366,032	295,798	641,608	271,151
4	↓	230,000	374,160	324,775	668,460	271,948
5	411,600	↓	405,840	329,467	688,046	275,824
6	↓	260,000	410,757	357,787	708,847	280,892
7	447,600	↓	440,471	363,745	728,365	282,574
8	↓	270,000	446,146	371,288	744,733	287,581
9	469,200	↓	463,629	373,893	757,158	288,471
10	↓	275,000	469,200	375,743	770,024	290,799
11	478,800	↓	477,015	381,271	783,298	290,815
12	↓	277,000	478,800	383,607	789,659	290,691
13	496,800	↓	491,170	387,200	799,973	286,528
14	↓	282,000	496,800	394,097	804,367	284,828
15	520,800	↓	517,920	397,327	807,413	283,306
16	↓	↓	522,118	397,271	817,952	279,794
17	535,800	↓	530,586	401,380	830,583	280,033
18	↓	↓	535,118	400,000	836,297	277,262
19	↓	↓	536,238	399,351	834,751	273,564
20	↓	↓	536,449	399,986	848,178	273,602
21	↓	↓	536,632	402,720	851,621	272,169
22	↓	↓	535,962	397,149	858,265	268,924
23	↓	↓	535,959	399,058	857,763	269,481
24	↓	↓	537,960	397,595	859,367	267,608
25	↓	↓	537,933	397,909	860,266	264,417
26	↓	↓	537,857	397,721	864,384	261,089
27	↓	↓	537,857	397,721	868,447	256,069
28	↓	↓	537,809	393,426	-	-
29	↓	↓	538,294	394,225	-	-

(注)① 年度は入学年度である。

② 国立大学の平成16年度以降の額は国が示す標準額である。

③ 公立大学・私立大学の額は平均であり、公立大学入学料は地域外からの入学者の平均である。

Relative Burden of University Tuition

- In 1980, per capita GDP was 2.14 million yen, while national university tuition was 180,000 yen, or less than 10%.
- In the 2010s, national university tuition was 540,000 yen, or about 12% of GDP per capita of 4.4 million yen.
- The burden of university tuition on households appears to be slightly higher today than 40 years ago, but it has not changed significantly.
- On the other hand, the difference between GDP per capita and GDP per working population is larger now than in the past. Working-age households are thought to be earning more than in the past. This does not necessarily mean that the real burden on households is increasing.

University tuitions remains proportional to GDP

- In terms of the prevailing economic growth in Japan, the increase in university tuition fees from 1980 to 1997 was natural, and the stagnation since then is also natural because of the lack of nominal growth.
- In the U.S., though, the ratio of college tuition to GDP is probably even higher.
- For many years, private universities have pressured politics to say that tuition fees at national universities are too low and unfair, but tuition fees at national universities are in the trend range in terms of the ratio of tuition to GDP.
- In fact, it is the private universities that have been raising tuition fees in the name of correcting the disparity. In fact, the ratio of tuition fees between national and private universities has been stable at 1.6.

Reason for further rise in university tuition

- In the U.S., they say, "High college tuition is a progressive tax on high income people. Since it is politically difficult to impose a literal progressive tax on high-income earners, they take it as college tuition.
- In our generation, there are still many people whose parents graduated from high school, but they are university professors.
- Nowadays, however, there are hardly any university students with parents who have graduated from high school.
- If this is the case, then the parents of today's elite university students have the financial means to pay for their education, which means that university tuition fees can be raised even higher.

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