

Land Development Process, Urban
Studies Programme, CUHK
URSP3400

4a. Megaprojects – over budget, overrun

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Megaprojects

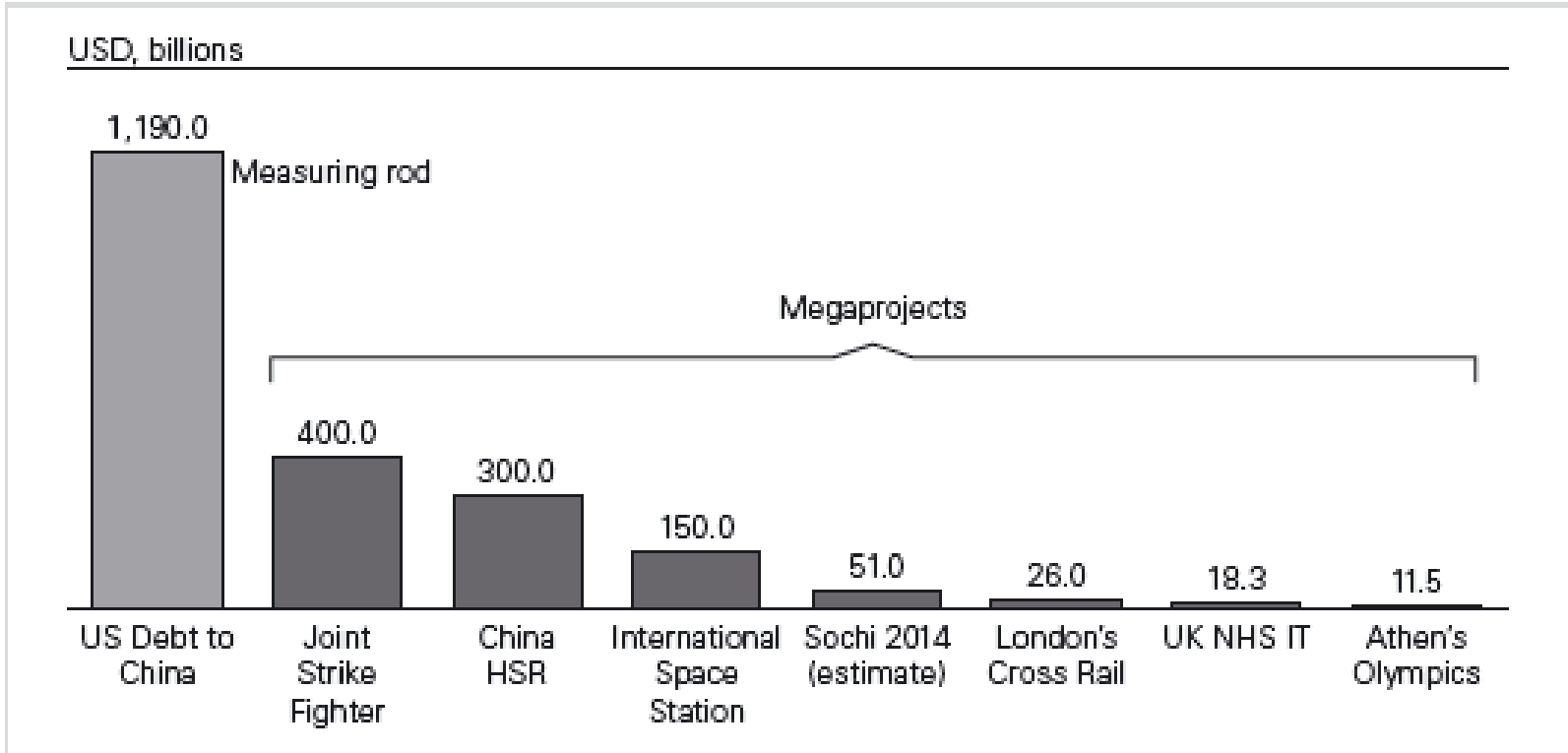


Figure 1: Size of selected megaprojects, measured against one of the largest dollar-figures in the world, the accumulated U.S. debt to China.

- Bent Flyvbjerg (2014) What You Should Know About Megaprojects and Why: An Overview, *Project Management Journal* 45(2), 6-19.
<http://ssrn.com/abstract=2424835>

部分基建超支情況

港鐵沙中線

原先估算:382億元
首次向立法會申請總額:798億元
最新估算:829億元
超支率*:**117%**
超支原因:發現宋代古蹟、大型交通管理措施、地底管線改道令進度落後

廣深港高鐵香港段

原先估算:440億元
首次向立法會申請總額:668億元
最新估算:715.2億元
超支率*:**63%**
超支原因:延誤需額外人手；有不能預見的工地情況

*最新估算對比原先估算

西九文化區

原先估算:216億元
首次向立法會申請總額:216億元
最新估算:446億元
超支率*:**106%**
超支原因:未詳細交代，林鄭月娥早前承認一次過興建設施是野心太大

港珠澳大橋

原先估算:559億元
首次向立法會申請總額:559億元
最新估算:698億元
超支率*:**25%**
超支原因:工資、建材、機械價格上升；工程時間緊逼、技術難度高

《明報》，2014.11.25

資

料

B

九大基建超支情況



屯門至赤鱗角連接路

原先估算：200億元
首次向立法會申請總額：280億元
最新估算：467億元

超支率(最新估算對比原先估算)：134%
超支原因：工程物價出現高通脹

廣深港高鐵香港段

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蓮塘/香園圍口岸

原先估算：195.5億元
首次向立法會申請總額：195.5億元
最新估算：318億元

超支率(最新估算對比原先估算)：63%
超支原因：工資、機械成本上升；隧道工程岩土狀況較預期差劣；工程技術難度高

港鐵沙中線

原先估算：382億元
首次向立法會申請總額：798億元
最新估算：829億元

超支率(最新估算對比原先估算)：117%
超支原因：發現宋代古蹟、大型交通管理措施、地底管線改道令進度落後

港珠澳大橋

原先估算：559億元
首次向立法會申請總額：559億元
最新估算：698億元

超支率(最新估算對比原先估算)：25%
超支原因：工資、建材、機械價格上升；工程時間緊迫、技術難度高

港鐵南港島線

原先估算：124億元
首次向立法會申請總額：9億元*
最新估算：152億元

超支率(最新估算對比原先估算)：23%
超支原因：低估機械挖掘石層難度，隧道工程因加固及支撐工程滯後等

啟德區域供冷系統

原先估算：16.7億元
首次向立法會申請總額：16.7億元
最新估算：31.5億元

超支率(最新估算對比原先估算)：89%
超支原因：物料、器材及工人成本上升，因應不能預見的工地限制等

中環灣仔繞道

原先估算：281億元
首次向立法會申請總額：281億元
最新估算：360億元

超支率(最新估算對比原先估算)：28%
超支原因：建造隧道工程費用較預期高

總超支(最新估算對比原先估算)：1,602.5億元(66.4%)
對比首次向立法會申請總額：超支850.5億元(28.2%)**

*政府只承擔9億元，港鐵承擔餘下143億元

**不包括主要由港鐵承擔的南港島線工程費

資料來源：立法會文件及政府官員

明報製圖

11項大型基建——原先預算與預計超支情況表

工程名稱	第一次立法會撥款	現時造價	超支額
南港島線（東段）	124 億	152 億	28 億
西港島線	172 億	185 億	13 億
觀塘線延線	53 億	未有公布	因有延誤勢超支
沙中線	798 億	829 億	現已超支至少 31 億
中九龍幹線	尚未公布，估計最少 250 億	預計於本立法年度於立法會申請撥款	
中環灣仔繞道	281 億	360 億	79 億
廣深港高鐵	669 億	最少 715 億	最少 46 億
港珠澳大橋香港接線	162 億	250 億	88 億（已追加撥款）
港珠澳大橋香港口岸人工島	304 億	354 億	至少 50 億
蓮塘 / 香園圍口岸	195 億	313 億	118 億
屯門至赤蠟角連接路	280 億	467 億	187 億
總額	3,288 億	3,928 億	至少 640 億

Why Megaprojects?

Type of Sublime	Characteristic
Technological	The excitement engineers and technologists get in pushing the envelope for what is possible in “longest-tallest-fastest” types of projects
Political	The rapture politicians get from building monuments to themselves and for their causes, and from the visibility this generates with the public and media
Economic	The delight business people and trade unions get from making lots of money and jobs off megaprojects, including money made for contractors, workers in construction and transportation, consultants, bankers, investors, landowners, lawyers, and developers
Aesthetic	The pleasure designers and people who love good design get from building and using something very large that is also iconic and beautiful, such as the Golden Gate Bridge

Table 1: The “four sublimes” that drive megaproject development.

鐵公基，假大空

How Many Megaprojects?

- “McKinsey Global Institute (2013) estimates:
 - Global infrastructure spending will be US\$3.4 trillion per year between 2013 and 2030,
 - Or approx. 4% of the total GDP (or 8%)
- China (2004-2008) spent more on infrastructure in real terms than during the entire 20th century, which is an increase in spending rate of a factor of 20.”

Iron Law of Megaprojects

- Over budget, over time, over and over again!
- “9 out of 10 megaprojects have cost overruns, overruns of up to 50% in real terms are common, over 50% are not uncommon.
- Many projects end up in the so called debt trap”

Project	Cost Overrun (%)
Suez Canal, Egypt	1,900
Scottish Parliament Building, Scotland	1,600
Sydney Opera House, Australia	1,400
Montreal Summer Olympics, Canada	1,300
Concorde Supersonic Aeroplane, UK, France	1,100
Troy and Greenfield Railroad, USA	900
Excalibur Smart Projectile, USA, Sweden	650
Canadian Firearms Registry, Canada	590
Lake Placid Winter Olympics, USA	560
Medicare transaction system, USA	560

Break-fix Model

- “projects tend to ‘break’ sooner or later.
- Easy to begin and difficult and expensive to stop – lock-in effect.
- The ‘fix’ often takes place at great and unexpected cost”

Too Big To Fill

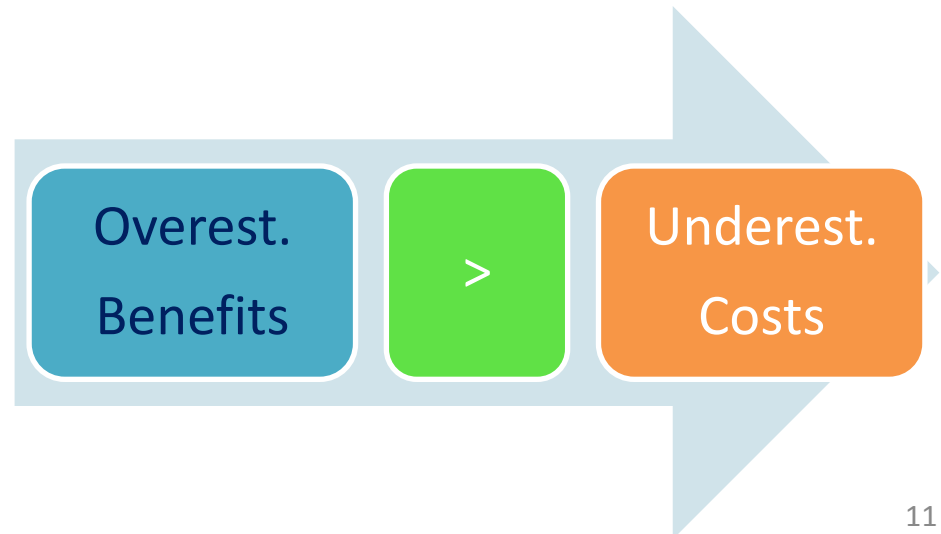
(Hirschman's Principle of the Hiding Hand)

- “In the world of civic projects, the first budget is really just a down payment.
- If people knew the real cost from the start, nothing would ever be approved. The idea is to get going. Start digging a hole and make it so big, there's no alternative to coming up with the money to fill it in.”
- Willie Brown, Mayor of San Francisco

先洗濕個頭

Why Hirschman is Wrong?

- “An optimistic cost estimate is low and leads to cost overrun,
- Whereas an optimistic benefit estimate is high and results in benefit shortfalls.
- Thus, errors of estimation do not cancel each other out.”



Implications of the Hiding Hand Practices

- “The problem is that the dubious and widespread practices of underestimating costs and overestimating benefits used by many megaproject promoters, planners, and managers to promote their pet project create a distorted hall-of-mirrors in which it is extremely difficult to decide which projects deserve undertaking and which do not.”

Solutions

- “the UK Treasury now requires that all ministries develop and implement procedures for megaprojects that will curb so-called ‘**optimism bias**’