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<u>Case Study</u>

A Tale of Three Airports

Vietnam is currently considering a major ($8 billion) investment in a new airport in Dong Nai province to replace Tan Son Nhat (TSN) in HCMC. The new airport will have a capacity of 80 to 100 million passengers a year, compared to 5 million passengers handled by TSN in 2002. [1]In order to investigate the desirability of building a new airport as opposed to improving the existing one, some facts about regional airports are presented in this case.

General Facts About Airports and Air Travel

Airports generally have two main types of traffic. Most have mainly passengers who are coming there as a final destination. These consist of business and tourist passengers. The second type, not as common, are those that are hubs, which handle passengers coming from somewhere else but passing through the airport to go to another location. By their nature, there cannot be very many hubs in one region since the whole point of a hub is to group demand from many countries or cities so as to improve connections. Indeed, with the growth in air travel, many believe that hubs in general will become less important in the future as there will be more direct city-to-city flights. If this is true, then most demand for airport use will come from domestic or foreign final destination passengers.

Domestic passengers to TSN grew 8.2% a year from 1995 to 2004, and the total in 2004 was 2.3 million arrivals and departures. This range of growth can possibly be projected into the future, as rates of domestic air traffic demand growth tend to exceed that of GDP by a modest amount. That would imply 5.1 million domestic passengers in 2014 and 11.3 million in 2024. Of course, the quality of road and rail infrastructure, service and prices will also determine whether or not price-sensitive consumers use aircraft for domestic destinations. The trip to Hanoi of 1700 kilometers (by road), for example, would probably imply air travel for government officials and business people but not necessarily for school groups or some people visiting relatives - unless fast train service were available.

International travel includes both business and tourist demand. International demand from 1995 to 2004 grew by 8.3% a year, with 2004 arrivals and departures amounting to 3.3 million[2]. Growth of international passengers will depend on tourism. Several tourist officials have noted that Vietnam is currently a one-time and often short-term destination and with only 3 to 3.5 million tourists a year vs. 10-11 million for Thailand. Vietnam will have to make major investments in facilities to begin to match the long-term attractiveness of a Thailand or Bali. In other words, the risks are that future growth will

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[1]It is worth noting that the busiest airport in the world in terms of total passengers is Chicago-O'Hare with 70 million arrivals and departures and nearly 1 million takeoffs and landings, including cargo, general aviation, and commuter airlines as well as regularly scheduled airlines. Paris-Charles De Gaulle has 48 million passengers a year, and France is the #1 tourist destination in the world.

[2]According to the Saigon times Daily, August 2, 2005, page 3, it is now expected that 3.5 million tourists will visit Vietnam in 2005, of which HCMC will account for about 55%, this implies 3.8 million arrivals and departures in HCMC. The effect of the December Tsunami have redirected tourists to Vietnam in 2005, but this effect is likely to fade or reverse overtime. The impact of terrorism in Thailand and Indonesia is also a factor, and it is difficult to estimate its long-term effect.

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slow rather than accelerate. If demand doubled every nine years, that would imply 7.3 million international passengers using TSN in 2014 and 15 million in 2024. General air travel in the Southeast Asia region is projected to increase at 5-6% a year for the next few decades[3].

It is worth noting that the three largest regional airports are Hong Kong with 28-34 million passengers a year, Changi-Singapore with 25-30 million, and Bangkok with about 30 million passengers a year. These are major hubs with tourist activity and high per capita incomes in Hong Kong and Singapore. Most of Thai traffic is from tourism.

Major airports typically start with two runways of 3.5 to 4 km in length. This allows 75 to 80 takeoffs and landings an hour, or potentially five hundred thousand takeoff and landings a year. However, there are seldom even nearly as many aircraft movements as that - even Hong Kong only has about 200,000 takeoffs and landings a year, while Singapore has 150 to 180 thousand, and there were 160,000 at Thailand's old Don Muang airport. Aircraft movements include all types of aircraft, such as cargo, military, and general aviation..

There has been a major round of regional airport expansions with a new $880 million terminal for 20 million passengers coming on line in Singapore in 2008, raising their total capacity to 64 million. Bangkok will open an entirely new international airport in 2005 with an initial capacity of 30-45 million passengers, more than double their recent

international traffic. Hong Kong's new airport also has substantial
expansion capacity. Its 2002/03 (pre-SARS) use level was only 10% above that than that of the old
Kai Tak in 1997! In general, regional passenger growth has been below 5% a year.

A final note is that when a new airport is built far out from the city downtown, there tends
to be a division of use. The "old" airport is used for domestic traffic, while the "new"
airport is used for international traffic. This has been the pattern in Tokyo, Bangkok
(planned), Kuala Lumpur, New York, and Washington D.C. This is less of an issue if the
airport is mainly a hub and most passengers simply get on another airplane.

The next two sections describe two regional airports in terms of recent costs, capacity and
use. This information might prove useful in evaluating potential investments in Viet Nam.
The following section describes operations at Ton Son Nhat airport.

Changi Airport, Singapore

Changi Airport in Singapore, 20 km from downtown, is regularly rated as one of the best in
the world and is a major hub for regional and global traffic. Its two terminals, opened in
1981 and 1991, serve two 4000-meter runways on 1300 hectares of land. The two terminals
will be joined by a third to open in 2008. While there are currently 25-30 million arriving
and departing passengers a year on 150 to 180 thousand takeoffs and landings a year, the
third terminal will increase the total capacity to 64 million passengers. The third terminal,
covering 350,000 square meters for 20 million passengers will have advanced features such

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[3]Boeing, the maker of airplanes, makes annual projections of traffic by region, but not by country. They
project Southeast Asian passengers will grow by 6.4% from 2004-14 and 4.6% from 2014-24.

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as automated baggage systems and people movers, and cost S\$1.5 billion (US\$ 880 million). Changi's fees for aircraft are among the lowest in Asia, but it still makes a profit.

It is interesting that there has been only slow growth in passengers from 1998 (23.8 million) to 2003 (24.6 million), though air cargo did rise from 1.28 million to 1.64 million tons. In spite of these increases, takeoffs and landings actually fell from 165 thousand in 1998 to 154 thousand in 2003, as the average airplane size increased. The third terminal will be able to handle even the new Airbus jumbo, so this trend might persist. However, it appears that the airport will have spare capacity for a long time to come since its 2008 capacity will be 2.6 times its 2003 passenger traffic, and growth is not expected to be very much higher since longer range aircraft and nonstop direct connections on airplanes such as the Boeing 787 will lessen the traditional importance of stopover airports and hubs.

New Bangkok International Airport (Suvarnbhumi)

The Don Muang airport 22 km from downtown Bangkok is reaching its limit of 30 million passengers and 160,000 flights a year. It also handles 0.7 million tons of freight a year. Next year (2005) will see the opening of the new Suvarnabhumi airport 30 km east of Bangkok. This \$3.9 billion airport spread over 3200 hectares will initially have a capacity of 30 to 45 million passengers [4] and handle international flights, while Don Muang will then handle only domestic flights. The new airport will have two 3.7 km

parallel runways of 60-meter width and 563,000 square meters
of terminal space. Its will be 3.0 million tons. It will be connected to Bangkok by
highways, and by the subway and perhaps the sky train as well. There is room in the
master plan for 4 runways and more terminal space, lifting ultimate capacity to 112
flights per hour (from 76 in phase I) and 112 million passengers a year as well as 6.4
million tons of freight.

Thailand is a major tourist destination, with nearly 11 million international arrivals in
2002. As these tourists also departed, they account for most of the air traffic, but are also
not increasing very rapidly. There was a 24% gain in tourists from 1998 to 2003, a growth
rate of 4.5% a year. The tourist numbers explain the relatively large airport traffic, but
also suggest that unless tourist demand increases more rapidly, there may not be rapidly
increasing demands for the Phase II expansion of the new airport.

Tan Son Nhat Airport

Tan Son Nhat airport, 10 km from downtown Ho Chi Minh City, is situated on 2400
hectares of land, though 1000 ha. of this is currently used for military purposes. It has
recently extended and upgraded a new runway (25L) to 3800 meters so it can take very
large aircraft. It also has a 3048-meter runway. In 2004, it handled 5.6 million passengers
(arrivals and departures) and the long-term growth rate is estimated at 7 to 9% a year.
(See data for recent years.) A new international terminal costing $220 million will handle
8 million passengers a year and will open in 2006, at a capital cost of $28 per passenger.
Most of this terminal is being financed with ODA funds at concessional rates. Room

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[4]There are different estimates of initial passenger capacity. Some estimates are for 30 million and some for
45 million arriving and departing passengers. It might depend on intensity of use and peak periods.

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exists to upgrade the other two terminals to similar standards, so for an additional $440 million, a capacity of 24 million passengers would be possible, and this could be supported by the existing runway system with only minor upgrading. There are currently 50 thousand scheduled takeoffs and landings a year, a small fraction of the potential. If passenger use did grow at 8% a year, then use would double every nine years. That would imply about 9 million passengers in 2010 and 20 million in 2020. Of course, there is no reason to build small terminals, and three of a size similar to Changi could be built and also handle 64 million passengers, as the airport areas are similar. Long-term growth in any case is hard to predict, so a step-by-step approach is likely to reduce risk.

Airfreight through TSN doubled from 2000 to 2004, from 56 to 112 thousand tons. This is only about 7% of Singapore's airfreight use from Changi and 16% of airfreight use at the old Don Muang airport in Bangkok.

A new airport is planned in Dong Nai on 5000 hectares of land. It is estimated to cost $8 billion when fully built out, and would be 50 km from downtown HCMC. When fully developed it would have a capacity of 70-100 million passengers, but the first phase of construction would be half of that. This new airport would be for international arrivals, which were under 3.3 million in 2004, yet it would have an initial capacity of 40 million. This seems to assume that HCMC would displace Hong Kong, Bangkok and Singapore as a major hub. Kuala Lumpur [5]and Bangkok in 2005 as well as Singapore and Hong Kong

have modern airports with underutilized capacity. With everybody
having spare capacity,
and wanting to be a hub, it is not clear what comparative advantage Vietnam would have.
Vietnam's tourism is currently about one-third of Thailand's and it will be many years
before it matches the current Thai level -- a level consistent with 30 million passengers
and well within the capacity of an expanded Tan Son Nhat costing only a fraction of $8
billion, or even of $4 billion, the likely cost for the first phase.

An Economic Development Masterplan of HCMC published in 1995 predicted that TSN
would be handling 21 million passengers by 2010. The general perception of the city
government as well as of the Vietnam Civil Aviation Authorities was that the capacity of
TSN should be limited to 15 million passengers. Three reasons were given to support this.
One was that the airport was surrounded by urban districts and could not expand. Two,
increasing passenger and cargo traffic would cause traffic congestion. Three, some
concerns were expressed about safety and environmental issues as the flight path of TSN
airplanes pass over some densely populated areas. As a result, as early as 1995, a plan
was made to build a new international airport in Long Thanh district of Dong Nai. The
use of mass transit to TSN, the use of quieter aircraft, industrial zoning on glide paths and
shifting of cargo operations to other area airports was not considered in that analysis.

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[5]This $3.5 billion airport has 15-18 million pax/year but waived landing and parking fees for 5 years! Its
phase I capacity is 25 million, but this will be raised to 40 million in a few years. It is 50 km from KL.

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Data for Tan Son Nhat:
(Passengers [pax] and takeoffs/landings in thousands)
1995-2004

	1995	2000	2001	2002	2003	2004	Growth Rate
Domestic pax	1150	1523	1811	2009	2082	2328	8.2%
International pax	1607	2309	2520	2945	2728	3301	8.3%
Total pax	2757	3832	4331	4954	4810	5629	8.3%
Takeoffs+Landings	27.9	32.8	38.9	43.3	43.3	49.9	6.7%
Airfreight ('000 tons)	43	56	74	84	93	112.3	11.2%

[Source: HCMC Statistical Yearbooks]

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Questions:

1. How can you estimate the 2020 level of demand for HCMC airport(s). Do you extrapolate the last ten year's growth. The last five or three years. Or do you try to estimate demand from domestic travel and international tourism and business. How might that be done. Can you compare TSN with other regional airports.
2. If Ton Son Nhat (TSN) could have three terminals like the one it is currently building for less than $220 million each and handle 24 million passengers, how long is that solution likely to last. If it instead built any new terminals to the standard of the new one at Changi (350,000 square meters for 20 million passengers for $900 million each), how long might that solution last.
3. How does one incorporate into the analysis the fact that TSN is so close to downtown HCMC. Many airports are close to major cities (eg. National at Washington DC, Logan in Boston, Changi in Singapore), but there are several issues. One is noise, though newer airplanes are much cleaner and quieter. [6] Another is land use - with land so expensive, is it sensible to use urban land for runways. A third is traffic. Any airport generates traffic, but one further out might require major road and rail investments compared to one so close in. [7]
4. How does one incorporate into analysis the availability of other existing major nearby airports such as that at Bien Hoa. It could handle military, general aviation (non-airline) flights and cargo, reducing the load on TSN.

5. Who should decide if a new airport is to be built
   should the airline have provided. (They might have to pay higher fees at an
   expensive new airport! This happened at Osaka, and it is not a popular
   destination.) Should the Ministry of Transportation. Should the City or Province.
   Who will ultimately be responsible for paying the debts. Are they the ones who
   make the investment decision.
6. Some land in TSN is used by the military. It appears that up to 1000 hectares
   could be used by them and still have the same area as Changi Airport left over for
   civilian use, but what issues would be involved (for example) in moving military
   flights from TSN to Bien Hoa. Should there be compensation for moving
   facilities. Who should pay the compensation and what should be included in it.
   How would these costs be included in the analysis. Similar questions apply to
   civilian residences near the takeoff and landing glidepaths which might need to be
   relocated. (In other close-in airports, zoning is used to restrict land use.)
7. Is your analysis different if the airport investment cost is financed by an
   international dollar bond issue costing 8% to 10% a year rather than low-cost
   ODA loans costing 1-3% a year.

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[6]New aircraft are about twice as quiet as earlier models. The International Civil Aviation Organization has
noise rules for "Chapter 2" aircraft built before 1977 and "Chapter 3" after that. After 2006, aircraft will be
built to even quieter standards. Many airports restrict aircraft to Chapter 3, or even the quieter end of that.
[7]Current HCMC metro plans include mass transit built out to TSN airport. This would reduce vehicle
traffic.

6

Chuo ng trnh Gi.ng d. y Kinh t. Fulbright   Nghin c.u Tnh hu.ng   Phuong php nghin c. u tnh hu.ng
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PHUONG PHP NGHIN C.U TNH HU.NG

(CASE STUDY METHOD)

Phuong php tnh hu.ng l m.t k. thu.t gi.ng d.y trong d cc thnh t. ch. y.u
c.a nghin c.u tnh hu.ng du.c trnh by v.i nh.ng ngu.i h.c v.i cc m.c dch minh
h.a ho.c cc kinh nghi.m gi.i quy.t v.n d.. Nghin c.u tnh hu.ng nhu l phuong ti.n
gi.ng d.y d v dang tr. nn r.t ph. bi.n trong gio d.c lu.t php, y h.c, v kinh doanh.
.i v.i m.c dch gi.ng d.y, m.t nghin c.u tnh hu.ng khng c.n ph.n nh cc bi.u
hi.n ho.c ho.t d.ng th.c t. c th.t m.t cch d.y d. ho.c hon ton chnh xc; hon l
m.c dch c.a n l d. thi.t l.p m.t khung c.nh cho s. th.o lu.n, tranh lu.n gi.a nh.ng
ngu.i h.c (Yin, 1984, trang 14).

PHUONG PHP TNH HU.NG L G.

Phuong php tnh hu.ng l phuong php h.c d.a trn co s. th.o lu.n. N cho php
ngu.i tham d. h.c b.ng cch th.c hnh v d.y ngu.i khc qua nghin c.u cc tnh
hu.ng c. th.. Tnh hu.ng m t. l.i m.t v.n d. th.c t. ta c th. g.p trong m.t t. ch.c.
Co h.i l.p di l.p l.i vi.c nh.n d.ng, phn tch v gi.i quy.t nhi.u tnh hu.ng da d.ng s.
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M.c d cc tnh hu.ng d du.c dng t. lu du.i hnh th.c ny hay hnh th.c khc trong cc ngnh lu.t v y, trong gi.ng d.y qu.n tr. n v.n l m.t phuong php tuong d.i m.i. .i h.c Kinh doanh Havard n.i ti.ng l don v. tin phong trong vi.c p d.ng tnh hu.ng d. gi.ng d.y kinh doanh. Nam 1910, Tru.ng khoa Gay d d. ngh. Ti.n s. Copeland cho sinh vin th.o lu.n d. b. sung thm phuong php d.c bi gi.ng. T. nam 1909 d.n nam 1919, cc ch.c s.c trong doanh nghi.p d.n tru.ng d. trnh by cc v.n d. th.c ti.n v sinh vin ph.i vi.t cc phn tch v ki.n ngh.. Quy.n sch d.u tin v. tnh hu.ng c.a Copeland du.c pht hnh nam 1921 sau cu.c pht d.ng c.a Tru.ng khoa m.i, Wallace B. Donham. Tru.ng khoa Donham l m.t lu.t su du.c do t.o b.ng phuong php tnh hu.ng nn nhn th.y t.m quan tr.ng c.a vi.c p d.ng phuong php tnh hu.ng trong gi.ng d.y qu.n tr. v ng d n. l.c li ko c. tru.ng vo cu.c.

Nam 1919, hai nh nghin c.u thu.c tru.ng phi truy.n th.ng c.a .i h.c Western Ontario (U.W.O) . Canada, Ti.n s. W. Sherwood Fox, Tru.ng khoa co b.n, v Ti.n s. K.P.R. Neville, Tru.ng phng gio v., d nhn th.y v kh.i xu.ng vi.c d.y kinh doanh theo phuong php tnh hu.ng c.a d.i h.c Havard. Sau khi xem xt c.n th.n t.t c. cc chuong trnh gi.ng d.y kinh doanh c.a cc tru.ng d.i h.c n.i ti.ng . B.c M., hai ng k.t lu.n l chuong trnh c.a .i h.c Kinh doanh Harvard d cung c.p cc phuong php t.t nh.t. Nam 1922, h. thu Ellis H. Morrow, m.t c.u sinh vin Harvard, tri.n khai m.t phin b.n Canada c.a chuong trnh Harvard. Ngy nay tru.ng kinh doanh Richard Ivey c.a d.i h.c Western Ontario l con chim d.u dn trong vi.c gi.ng d.y qu.n l b.ng phuong php tnh hu.ng . Canada v l don v. l.n th. hai trn th. gi.i s.n xu.t cc tnh hu.ng.

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Nguy.n H. u Lam 1 8/9/05

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Cc tnh hu.ng cho sinh vin v gi.ng vin cng m.t thng tin d. ra quy.t d.nh. T. kh.i
di.m ny m.i ngu.i s. dng m.t vai tr khc nhau trong qu trnh h.c t.p. Du.i dy l
b.ng tm t.t vai tr c.a gi.ng vin v sinh vin trong m.t l.p h.c b.ng tnh hu.ng thng
thu.ng

VAI TR C.A GI.NG VIN V SINH VIN TRONG L.P H.C B.NG TNH HU.NG

Th.i di.m	Gi.ng vin	Sinh vin
Tru.c khi d.y	Giao tnh hu.ng v ti li.u d.c	Nh.n tnh hu.ng v bi t.p
	Chu.n b. ln l.p	Chu.n b. c nhn
	C th. tham kh.o d.ng nghi.p	Th.o lu.n tnh hu.ng trong cc nhm nh.
Trong khi d.y	Gi.i quy.t cc ti li.u d.c	Nu cu h.i lin quan d.n ti li.u
	Hu.ng d.n th.o lu.n tnh hu.ng	Tham gia th.o lu.n
Sau khi d.y	nh gi v ghi nh.n s. tham gia c.a sinh vin	So snh phn tch c.a mnh v.i cc b.n
	nh gi ti li.u v c.p nh.t gio	Xem l.i cc khi ni.m quan tr.ng d h.c

gio		h.c
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		th.o
		lu.n
		tr.p

TNH HU.NG L G.

Tnh hu.ng l m t. c.a m.t tru.ng h.p c th.t, thu.ng bao g.m m.t quy.t d.nh, thch th.c, co h.i, hay v.n d. m m.t hay nhi.u ngu.i trong t. ch.c ph.i d.i ph. Tnh hu.ng yu c.u ngu.i d.c ph.i t.ng bu.c nh.p vai ngu.i ra quy.t d.nh c. th..

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Cc tnh hu.ng s. du.c cng b.. M.t nhn v.t no d trong t. ch.c s. k quy.t d.nh chnh th.c cho php s. d.ng tnh hu.ng trong gi.ng d.y. Chnh s. cng b. ny phn bi.t cc tnh hu.ng v.i cc lo.i ti li.u gi.ng d.y khc

Tnh hu.ng l s.n ph.m c.a m.t qu trnh nghin c.u v bo co c.n th.n. N.i dung c.a tnh hu.ng thay d.i theo m.c dch gio d.c. Ty theo m.c tiu gi.ng d.y, nh nghin c.u tnh hu.ng s. bo co cc thng tin v. quy.t d.nh m nhn v.t chnh trong tnh hu.ng ph.i d.i ph. M.t vi kha c.nh c.a quy.t d.nh s. du.c nh.n m.nh v cc y.u t. khc c th. b. b. qua.

Nguy.n H. u Lam 2 8/9/05

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| Nin kha 2005-2006 | Bi d.c | |

Cu.i cng m.t tnh hu.ng m.i s. du.c ki.m tra l.i trong l.p h.c xem n c th.c hi.n du.c m.c tiu gio d.c d d. d.nh khng

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T.I SAO DNG TNH HU.NG.

Cc tnh hu.ng cho php sinh vin h.c qua th.c hnh v d.y ngu.i khc. H. c co h.i nh.p vai v gnh trch nhi.m c.a nh.ng con ngu.i c. th. trong nh.ng t. ch.c c. th..

chnh l hnh th.c hu.n luy.n t.i ch.. Phuong php tnh hu.ng
cho php sinh vin tham gia vo qu trnh d.nh m ngu.i ta ph.i th.c s. duong d.u trong m.t t. ch.c
th.c; c quy.n s. h.u, c.m gic du.c p l.c, nh.n ra rui ro, v trnh by tu.ng c.a
mnh v.i ngu.i khc.

Cc tnh hu.ng cung cho php sinh vin tch luy kinh nghi.m khi tm hi.u cc v.n d. lin
quan d.n nhi.u linh v.c chuyn mn, nhi.u c.p qu.n l, nhi.u lo.i hnh v quy m doanh
nghi.p, cung nhu nhi.u d.a di.m trn th. gi.i. Chnh .nh hu.ng tch luy c.a nh.ng thch
th.c khc nhau ny cho php sinh vin s. lm vi.c sau ny bi.t r.ng qu trnh ra quy.t
d.nh hi.u qu. tr. thnh m.t ti s.n c nhn quan tr.ng.

Cc tnh hu.ng cho sinh vin co h.i th.c hnh khoa h.c cung nhu ngh. thu.t qu.n l
trong m.t thi.t k. th nghi.m nn h.n ch. du.c rui ro c.a c nhn cung nhu t. ch.c.
Th.c ch.t, cc tnh hu.ng d.i v.i sinh vin qu.n tr. cung gi.ng nhu cc t. thi d.i v.i
sinh vin tru.ng y- m.t co h.i th.c hnh v h.i.

Tnh hu.ng cung l cng c. tuy.t v.i d. ki.m tra ki.n th.c l thuy.t v hi.u bi.t su s.c
hon. B.n thn cc tnh hu.ng c th. ch.a cc tu li.u l thuy.t ho.c cc ti li.u d.c lin
quan d.n tnh hu.ng giao cho sinh vin c th. bao qut m.t s. phuong di.n l thuy.t.
Cc tnh hu.ng cho sinh vin co h.i th.y l thuy.t du.c p d.ng vo th.c t. nhu th. no
hay nh.n ra nhu c.u c.a l thuy.t.

Cc tnh hu.ng cung c.p thng tin v. cch cng vi.c du.c ho.ch d.nh v t. ch.c trong
nhi.u tru.ng h.p khc nhau, cc h. th.ng ho.t d.ng ra sao v cc t. ch.c c.nh tranh nhu
th. no. Phuong php tnh hu.ng d.c bi.t thch h.p v.i hon c.nh m.i v ph.c t.p. Cc
nh qu.n l c.n thch nghi v.i mi tru.ng lun thay d.i.

Nguy.n H. u Lam   3   8/9/05

Chuo ng trnh Gi.ng d. y Kinh t. Fulbright   Nghin c.u Tnh hu.ng   Phuong php nghin c. u tnh hu.ng
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Phuong php tnh hu.ng bu.c sinh vin ph.i ra quy.t d.nh v.i nh.ng thng tin c s.n v xc d.nh thng tin cn thi.u. Trong th.c t. hi.m khi ti.p c.n du.c t.t c. thng tin c.n thi.t d. ra quy.t d.nh.

Cc tnh hu.ng gip sinh vin pht tri.n lng t. tin, kh. nang suy nghi d.c l.p v h.p tc trong cng vi.c v.i d.ng nghi.p. Hon n.a, cc tnh hu.ng cn thc d.y pht tri.n tu duy v. cc m.t m.nh y.u v cho php c nhn ti.n tri.n v.ng ch.c. Cc tnh hu.ng cung b.t bu.c sinh vin ph.i c trch nhi.m v.i vi.c h.c c.a h..

B.ng phuong php tnh hu.ng sinh vin s. g.n v.i qu trnh h.c cch ngu.i ta h.c nhu th. no. M.c d m.i tnh hu.ng d.u khc nhau nhung bao trm ln t.t c. l qu trnh h.c phuong php h.c.

Tnh hu.ng cung c.p co h.i d. pht tri.n r.t nhi.u k. nang li.t k sau dy:

K. nang phn tch d.nh tnh v d.nh lu.ng, bao g.m k. nang xc d.nh v.n d., k. nang qu.n l d. li.u v k. nang tu duy c phn don

K. nang ra quy.t d.nh, bao g.m vi.c dua ra cc phuong n khc nhau, tiu chu.n l.a ch.n, dnh gi cc phuong n, ch.n ci t.t nh.t, v ln k. ho.ch th.c hi.n

K. nang .ng d.ng, s. d.ng nhi.u l thuy.t, k. thu.t, cng c. khc nhau

K. nang giao ti.p b.ng l.i, bao g.m cc k. nang ni, nghe v tranh lu.n

K. nang qu.n l th.i gian, dng cho chu.n

K. nang qu.n l th.i gian, dng cho chu.n
th.o nhm, th.o lu.n nhm nh. v

K. nang quan h. x h.i, khi lm vi.c v.i d.ng s., gi.i quy.t xung d.t v th.c t.p
ngh. thu.t th.a hi.p trong nhm nh. hay l.n

K. nang sng t.o, t. vi.c mong d.i v tm th.y cc gi.i php an kh.p v.i cc tnh
hu.ng d.c nh.t

K. nang giao ti.p b.ng van b.n, t. vi.c ghi ch hi.u qu. v d.u d.n, vi.t bo co
v thi b.ng tnh hu.ng

Cu.i cng, h.c v.i cc tnh hu.ng l di.u th v.

M.C TIU C.A PHUONG PHP TNH HU.NG: S. nh.y c.m, S. th.u c.m, v Nh.ng k. nang Tuong tc gi.a cc c nhn

Nh.ng y.u t. ny c.a s. hi.u bi.t lm tang thm s. khn ngoan x h.i.

S. nh.y c.m cho php m.t ngu.i nh.n bi.t v. nh.ng nghia bn trong c.a
nh.ng ngu.i khc . m.c d. su hon nh.ng ngu.i ch. nh.n th.c b.ng l tr thng minh.

S. th.u c.m gp ph.n vo s. tn tr.ng ngay c. nh.ng c.m xc m m.t ngu.i
khng chia x.. Nh.ng s. tn tr.ng nhu v.y c th. gip th.y du.c, hi.u du.c nh.ng gi.
d.nh c.a b.t k. nh.ng hnh vi th. hi.n ra l phi l m nh.ng hnh d.ng c.a con ngu.i
lun lun c nh.ng l do nh.t d.nh.

V nh.ng k. nang tuong tc gi.a cc c nhn thu.ng t.o ra nh.ng kh. nang d.
lm vi.c v.i nh.ng ngu.i khc m nh.ng ngu.i ny d.i v.i ngu.i ngoi cu.c thu.ng
xem h. l c nh.ng hnh vi c.c k. phi l.

Nguy.n H. u Lam 4 8/9/05

Chuo ng trnh Gi.ng d. y Kinh t. Fulbright Nin kha 2005-2006	Nghin c.u Tnh hu.ng Bi d.c	Phuong php nghin c. u tnh hu.ng

M.C TIU C.A PHUONG PHP TNH HU.NG: Nang l.c tr tu.

Nang l.c d. tu duy m.t cch r rng t.i t.t c. cc m.c d. c.a s. tr.u tu.ng.

Nhanh chng tiu ha, d.ng ha v t. ch.c r.t nhi.u cc thng tin.

K. nang trong vi.c nh.n d.ng, trnh by c h. th.ng, v h.i nh.p cc v.n d. cho cc hnh d.ng ng.n h.n v lu di.

Khuynh hu.ng di t.i nh.ng ch. d.n cho cc hnh d.ng trong tuong lai t. nh.ng s. ki.n hi.n t.i.

Nh.n bi.t nh.ng s.c m.nh v nh.ng di.m y.u c.a m.t ngu.i.

Ngh. thu.t c.a d.t d.n s. sng t. t. cc thng tin v s. d.ng c. s. sng t. l.n s. nh.n th.c mu.n mng d. pht tri.n s. nhn xa trng r.ng.

S. nang d.ng, nhanh nh.n trong vi.c di ln v di xu.ng cc n.c thang c.a s. tr.u tu.ng, di t. nh.ng s. ki.n, s. vi.c t.i m.c d. c.a nh.ng tu.ng khi qut v ngu.c l.i d. th.c hi.n hnh d.ng t.i m.c d. c.a s. ki.n, s. vi.c th.c t.p ngh. thu.t c.a s. khi qut ha t. kinh nghi.m theo cch r.t th.c t. v r.t nang d.ng. V.i m.c tiu ny, s. l h.u ch trong vi.c s. d.ng cc gi. d.nh v.n hnh khi qut ha v.i m.t co s. r.ng ri nh.ng quan st, nhung khng c.ng nh.c. M.t gi. d.nh v.n hnh thu du.c m.t s. khi qut ha nhu v.y s. gip cho tr tu. c.a m.t ngu.i lun c.i

m.iv.i M.ngind.nthvn hnh l d.i tu.ng c.a vi.c dnh gi vi.c ho.t d.ng v n.u n khng v.n hnh t.t th thay th. chng.

M.C TIU C.A PHUONG PHP TNH HU.NG: Thi quen th.c m.c, d.t cu h.i

M.c d s. hon h.o l khng d.t du.c, phuong php tnh hu.ng c th. dua ra nh.ng ch. d.n, th.c t., v d.ng vin cho b.t k. ai trong vi.c tm ki.m m.t s. t.ng h.p c.a s. hi.u bi.t. V m.t l do t.i sao phuong php tnh hu.ng l h.u ch l v n t.o ra thi quen c.a vi.c th.c m.c, d.t cu h.i. C th. ni m.t cch hay ho r.ng: s.ng l d. d.t cc cu h.i v. cu.c s.ng. chnh l l do m r.t nhi.u ngu.i th.y . phuong php ny l r.t s.ng d.ng, th v. v d.y h.p d.n.

CC UU I.M C.A PHUONG PHP TNH HU.NG

1. N l c nhn. N d.t gnh n.ng trong vi.c tu duy, suy nghi vo cc thnh vin v khu.y d.ng nh.ng quan tm, l.i ch c.a h. b.ng vi.c lm cho h. tr. nn nh.ng ngu.i tham gia tch c.c, ch. d.ng hon l th. d.ng.

2. N l th.c. Cc thnh vin xem xt, kh.o st, nghin c.u cc tnh hu.ng th.c s. d x.y ra.

3. N l c. th.. Cc thnh vin gi.i quy.t v.i nh.ng s. ki.n v s. th.t c. th. hon l v.i nh.ng khi qut ha. Phuong php dua t.i m.t s. th.a nh.n l cc cng th.c v cc nguyn t.c l r.t t c gi tr. trong nh.ng tnh hu.ng c. th. v m.i tnh hu.ng di h.i nh.ng s. hi.u bi.t ring v nh.ng ph.n .ng ring c.a n.

Nguy.n H. u Lam   5   8/9/05

Chuo ng trnh Gi.ng d. y Kinh t. Fulbright   Nghin c.u Tnh hu.ng   Phuong php nghin c. u tnh hu.ng
Nin kha 2005-2006   Bi d.c

4. N d.t cc thnh vin vo tnh hu.ng nhm. N t.o ra nh.ng co h.i d. lm vi.c
    m.t cch h.p tc v v.i s. th.a mn trong nhm, v t.o ra nh.ng c.m gic v. t.m
    quan tr.ng c.a nhm m mnh tham gia.

5. N thi.t l.p quan h. m.nh m., ch.t ch. gi.a cho v nh.n. Cc thnh vin ph.i
    bi.n h., ch.ng minh, v b.o v. quan di.m ring c.a h. v d.ng th.i ph.i c. g.ng
    pht tri.n v s. d.ng nh.ng dng gp c.a nh.ng ngu.i khc.

6. N mang t.i m.t s. th.a nh.n b.i cc thnh vin r.ng nh.ng ngu.i khc nhn
    tnh hu.ng theo nh.ng cch th.c r.t khc nhau, r.ng nh.ng ngu.i khc c cc v.n
    d. tuong t. gi.ng nhu v.n d. c.a ring mnh, v nh.ng ngu.i khc c kh khan
    trong gi.i quy.t cc v.n d..

7. N t.o ra m.t s. nh.n th.c, hi.u bi.t r.ng cc d.ng v.n d. du.c th.o lu.n khng
    c m.t ch. d., m.t d.i tu.ng, ho.c m.t cu tr. l.i.

8. N pht tri.n phn quy.t v nang l.c d. tu duy m.t cch d.c l.p v m.t cch chn
    ch.n hon.

9. N t.o ra nh.ng kinh nghi.m cho vi.c th.c hi.n nh.ng ph.n quan tr.ng, c.t li
    c.a cc nhi.m v. lnh d.o v qu.n l. N t.o di.u ki.n cho cc thnh vin pht
    tri.n nh.ng thi quen c.a phn tch m.t tnh hu.ng, s. d.ng nh.ng ki.n th.c th.c
    t., hnh thnh cc chuong trnh hnh d.ng, v ra cc quy.t d.nh. V n t.o ra
    nh.ng kinh nghi.m ny m khng h. c m.t r.i ro cho cc thnh vin ho.c cho

cc
t.

ch.c
trong

h.

nh

thng

vin

10. N mang l.i m.t s. hi.u bi.t t.t hon v. hnh vi c.a con ngu.i, v m.t s. nh.y c.m hon d.i v.i cc nguyn nhn c.a cc hnh vi c.a con ngu.i, v m.t s. nh.n bi.t v. s. c.n thi.t tm ki.m, theo du.i cc nguyn nhn th.c s.. Cc thnh vin nh.n ra r.ng con ngu.i c nh.ng xu hu.ng c nh.ng c.m gic, tnh c.m v nh.ng ni.m tin m nh.ng di.u ny l khng logic, song nh.ng di.u ny l.i r.t quan tr.ng d.i v.i h., v nh.ng di.u ny c.n du.c quan tm xem xt. Cc thnh vin cm th.y r hon nh.ng hnh d.ng c.a h. .nh hu.ng, tc d.ng t.i hnh vi c.a nh.ng ngu.i khc nhu th. no.

11. N pht tri.n cc k. nang thng tin, giao ti.p. Cc thnh vin h.c t.p cch l.ng nghe t.t hon. H. cung h.c v hon thi.n nang l.c c.a h. trong vi.c chuy.n t.i, truy.n d.t cc tu.ng.

12. N lm gi.m cc thi d. c.ng nh.c, nhu ci mu d. l ci mu nng v s. hi lm con ngu.i lm vi.c cham ch. hon. N t.o ra nh.ng thay d.i trong thi d., quan di.m v pht tri.n s. s.n lng xem xt, nghin c.u v.n d. t. t.t c. cc quan di.m khc nhau.

Nguy.n H. u Lam   6   8/9/05

Chuo ng trnh Gi.ng d. y Kinh t. Fulbright   Nghin c.u Tnh hu.ng   Phuong php nghin c. u tnh hu.ng
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NH.NG NHU.C I.M C.A PHUONG PHP TNH HU.NG

1. N khng th.c s. cung c.p nh.ng kinh nghi.m th.c. Trong khi phuong php tnh hu.ng s. d.ng nh.ng tnh hu.ng th.c, c nhi.u kha c.nh, phuong di.n trong d khng hi.n th.c. Nh.ng ngu.i tham gia khng c cc trch nhi.m th.c s. cho cc quy.t d.nh m h. d. ra. Nh.ng s. th.c du.c trnh by, cc thnh vin c r.t t th.c t.p trong vi.c tm ki.m, theo du.i v nh.n d.ng nh.ng s. ki.n, s. vi.c, s. th.t v nh.ng quan h.. V n c th. khng kh. thi d. trnh by t.t c. nh.ng s. th.t, s. vi.c, v s. ki.n, tnh hu.ng c th. b. don gi.n ha. M.t tnh hu.ng du.c vi.t khng th. chuy.n t.i t.t c. nh.ng s. tinh t., nh.y c.m nhung d.ng th.i l.i l nh.ng di.m quan tr.ng trong hnh vi c.a tnh cch v hnh vi c.a con ngu.i. Cc thnh vin khng c.m nh.n v c kinh nghi.m c.a nh.ng tuong tc thnh cng m nh.ng tuong tc ny l m.t b. ph.n quan tr.ng c.a nh.ng kinh nghi.m th.c.

2. N l chua hon thnh, cn thi.u. N khng theo du.i qu trnh th.c hi.n quy.t d.nh v ki.m tra trn nh.ng k.t qu. c.a quy.t d.nh.

3. i khi n don gi.n ha vi.c ra cc quy.t d.nh. Trong cu.c s.ng th.c, hnh d.ng c th. khng du.c phn quy.t ho.c m.t gi.i php c. th. no d c th. l khng kh. thi.

4. N di h.i ngu.i lnh d.o th.o lu.n ph.i c nhi.u k. nang, kinh nghi.m hon cc phuong php khc. S. l d. dng dua ra cu h.i hon l d.t cc cu h.i m n s.

kch thch th.o lu.n v gi. cu.c th.o lu.n dng

hu.ng. N phi hi.u ngu.i mh.to cao d. ki.m ch. vi.c dua ra nh.ng quan di.m c
nhn c.a mnh. M.t ngu.i gi.ng bi c th. ch.n l.a cc cu h.i m anh ta s. th.o
lu.n; trong phuong php tnh hu.ng khng th. d. don tru.c t.t c. cc cu h.i c
th. du.c nu ln trong cu.c th.o lu.n.

5. N l khc bi.t. Khng ch. nhu v.y, m n l r.t khc bi.t. Nh.ng ngu.i tham gia
    lun lun c.m th.y n.n lng, th.t v.ng khi ban d.u h. th.y khng c nh.ng k.t
    lu.n c. th., nh.ng cu tr. l.i c. th., ho.c m.t cng th.c c. th.. M.t s. ngu.i c
    th. tm nh.ng tu.ng c.a tu duy cho h. l m.i m. v th.m ch l r.t dng s..

6. N l ch.m ch.p. Cu.c th.o lu.n v tranh ci m phuong php ny di h.i m.t
    cch t. nhin di h.i nhi.u th.i gian hon nh.ng d.ng ch. trnh by ni. Lun lun
    n c.n th.i gian d. vu.t qua th.i k. n.n lng du.c d. c.p l 5.

7. N khng th. thch h.p cho t.t c. m.i ngu.i.

8. N th. hi.n nh.ng co h.i l.n hon cho nh.ng ngu.i hung hang trong vi.c d.c
    quy.n cu.c th.o lu.n.

9. N l kh khan trong vi.c h.i nh.p nh.ng k.t qu. c.a phuong php ny v.i th.c
    ti.n v.n hnh c. th..

10. N l khng h.u ch khi m.c dch ch. y.u l chuy.n t.i cc thng tin, s. ki.n, s.
    th.c.

11. N c th. l lng ph th.i gian v nh.ng n. l.c, n.u khong du.c s. d.ng m.t
    cch ph h.p.

Nguy.n H. u Lam 7 8/9/05

Fulbright Economics Teaching Program
Academic year 2005-2006
Summer Term

Case Studies for Policy Analysis

Assignment 4 & 5

Analysis of Dung Quat Refinery

Problem 4 (due: Thursday, 25/8/2005)

1. As representative of the assigned group, group leader will present
   collective concerns relating the Dung Quat Refinery Case (focus should be
   put on analysis supported with rationale and data, avoid generalization).

2. Based on owned group perspective, what are objective, fair and desirable
   procedures that can lead to a right decision serving the nation interest.

Problem 5 (due: Monday, 29/9/2005)

1. What are problems that need to be solved in the case.

2. What are specific standards that a right decision for the Dung Quat case should meet. What should be done to respond to different concerns and benefits of stakeholders.

3. What are possible solutions to this case. Why.

Nguy.n H.u Lam   1   9/29/2005

Fulbright Economics Teaching Program	Case Studies	The Dung Quat Oil Refinery
Academic year 2005-2006		

The Dung Quat Oil Refinery

Introduction

Vietnam produces and exports crude oil and imports refined products. The amounts of refined oil product imports have been growing from 5 million tons in 1995 to ten million in 2002 and an estimated twelve million tons in 2005.   [1]Production has also been rising and is likely to exceed seventeen million tons in 2005.

There are different types of crude oil. Some are heavy meaning that simple distillation (heating) of the crude will yield mainly products that weigh more per unit volume. Bunker fuel oil is a heavy product. Diesel oil and kerosene (jet fuel) are middle distillates. Gasoline and gas used for LPG (liquefied petroleum gas, or gas at room temperature which liquefies under slight pressure) are lighter products. Light crudes, such as Vietnam has, have more products from the middle and upper or lighter ranges. Some crude oil is sour meaning it has high sulphur content. Sweet crudes, such as Vietnam has, have lower sulphur content. It is desirable to have sweet crude because sulphur causes pollution and can foul catalytic converters used in many cars to control pollution. Likewise, heavier crude oils are less desired now because most boiler fuel is not now from oil but from coal or natural gas, both of which are normally cheaper heat sources than heavy oil. It is diesel, gasoline, jet fuel and LPG that are more valuable and in demand. Desirable light crudes can cost $10 to $20 more per

in demand. Desirable light crudes can cost $10 to $20 more per
barrel ($70 to $140 more) than sour, heavy crude, at least at 2005 price levels in the $50 to $60/bbl range.

Oil refining at its most simple is heating crude oil and distilling into different fractions
the different products such as heavy fuel oil, diesel fuel, gasoline, LPG, etc. that have
different boiling points. If the desired product mix is not naturally produced by simple
heating, then crude oil can be cracked or reformed. Cracking breaks down heavy
products into lighter ones. Reforming combines lighter products into heavier ones.
However, adding cracking or reforming capacity adds to the cost of a refinery, as does
desulphurization or adding other units for producing lube oils or raw materials for plastics.

The oil refining industry is somewhat segmented geographically, as many richer nations
demand low sulphur fuel and oxygenated gasoline, while poorer nations are still willing
to take higher sulphur (and more polluting) fuel and gasoline without additives. This basic
gasoline creates more carbon monoxide, a pollutant. The extra cost of producing these
premium fuels can be several dollars per barrel. Historically, the crack spread or
difference between a blended mix of products and the cost of crude oil has been $1 to $5
a barrel. The differences vary so much because refineries tend to be run close to capacity
all the time, so variations in demand cannot always be made up by variations in supply. In
addition, refineries have historically had a low rate of return, so investments in new
refineries (as opposed to less expensive expansions of existing capacity) have been very
limited in most countries.

Most refineries are either built very close to the source of crude input or very close to the
place of final product demand. Transport costs are a key expense and minimizing them at

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[1]Tons are normally used to measure petroleum output and use in Vietnam. Another common industry
measure is the barrel (= 42 gallons or 159 liters). There are about 7.2 barrels per ton, depending on the
type

type
of
crude
oil
or
product.

[1]

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either end is important if a reasonable return is to be earned. Pipelines are the cheapest way to transport crude oil or product over short to moderate distances. Large tankers, however, are also very cheap. Small tankers, barges and trucks are among the more expensive ways to ship oil.

One noteworthy aspect of Vietnams oil trade is the difference in price between a ton of crude exports and a ton of refined product. The table below shows these values for the last several years. The difference is that of import price per ton less export price per ton.

	Export, $/ton	Import, $/ton	Difference	[Import Volume*]
1999	$141	$142	$ 1	7.4
2000	$227	$234	$ 7	8.8
2001	$187	$203	$16	9.0
2002	$194	$202	$ 8	10.0
2003	$220	$245	$25	10.0
2004	$290	$328	$38	10.9
2005 (J-J)	$384	$392	$ 8	5.9

* Import volume is in million tons

The average difference over these seven years (taking the first half of 2005 as a full year) is about $15 per ton or $2 per barrel. If a depressed 1999 is left out, it is $17/ton. Notice that the difference swings around markedly from year to year. In some years the cost of

exports and imports are virtually equal. In other years, the difference
is nearly $40 a ton. Import volume has grown irregularly, averaging 6.5% a year growth since 2000.

Vietnam has made long-term contracts with Singaporean refineries, and these refining
costs are normally under $2 a barrel. The deal is that Vietnamese crude is delivered and
an appropriate amount of product is returned. However, Singapore may use cheaper
Middle Eastern crude oils to provide product for Vietnam, using the lighter Vietnamese
crude oil for markets that demand lower sulphur levels. In addition, there is a charge
(roundtrip) of about $3 to $4 per barrel for transportation charges.   [2]That is, the total
refining and transport charge is about $30 to $35 a ton. When the import price less the
export price is less, it is presumably because some of the savings from using lower priced
Middle Eastern crude oil for Vietnamese product has been passed along.

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[2]A major part of transport is the loading and unloading of oil. Thus, the costs of taking crude oil to Singapore or
Central Vietnam or from Singapore or Central Vietnam to major

Central Vietnam or from Singapore or Central Vietnam to major consuming cities is very similar.

2

Fulbright Economics Teaching Program   Case Studies   The Dung Quat Oil Refinery
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Dung Quat

Ideas for a Vietnamese refinery were discussed in the early 1990s. Most early proposals centered on the Ba Ria-Vung Tau area. This was because this location was close to the offshore oil wells and very close to HCMC, the major source of product demand. Major international oil companies were interested in participating in a refinery in that area, though some also wanted the right to sell product locally.

However, there was a shift in official thinking and the site chosen was at Dung Quat in Quang Ngai province. This location is some distance (800 to 1000 km) from both oil production and major cities consuming oil. It is also in area threatened by typhoons, necessitating extra investment in a seawall on soft ground to protect the facility. The decision to build the refinery was taken by the Prime Minister in 1997. The facility was supposed to cost $1.5 billion (including the seawall and associated infrastructure, but excluding any financial charges) and process 6.5 million tons of crude oil a year. The financing was supposed to be $600 million equity with the balance from bank loans and bond sales. Completion was targeted for 2001 and full operation in 2002. All major international oil companies dropped out from participating in Dung Quat, claiming that the site made no economic sense and that unused refining capacity in the region made it more economic to refine oil elsewhere.

Because the Asian Crisis hit oil revenues, the Vietnamese

government decided to include government Company, Zarubezhneft, as a 50% partner in Dung Quat. However, there were many disagreements about bidding and contracting procedures. The Russian company also wanted oil trading and retailing rights in Vietnam to offset the expected low returns on the refinery. When these trading rights were not allowed by Petrovietnam, the partnership was dissolved in February 2003. By 2005, a consortium had been put together to build the refinery. It included Frances Technip, Malaysias Technip Geoproduction, Japan Gasoline Corporation, and Spains Technicas Reunidas. The completion date expected is now February 2009, but the total cost of the refinery is now $2.5 billion. The extra $1 billion cost is due to inflation and a different product mix. In June, 2005 the following output in tons per year was expected [3]:

Auto Diesel 3.00 million tons
Unleaded Gasoline 1.80 million tons
LPG 0.30 million tons
Kerosene/jet fuel 0.40 million tons
Fuel Oil 0.30 million tons
Propylene 0.11 million tons

Total 5.91 million tons

Input for the refinery is supposed to be a mix of light crude oil (5.5 million tons from the Bach Ho field) and 1 million tons of heavier Dubai crude. Notice that the output of the refinery is only 5.91 million tons, while the input is 6.5 million tons. That is because a modest per cent age (usually 5% to 7%, but 9% for Dung Quat) of the oil input is used in heating and powering the refinery operations. Some of this is not crude oil but lower

[3]The source for this is a June 10 [th], 2005 Reuters report from IntellAsia reporting on an address by Industry Minister Hoang Trung Hai to the [th].

Minister Seddrg Seang leal to the
National Assembly on June 8   ,
2005.

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valued heavy oil products, but this difference has to be kept in mind in evaluating the economic returns to a refinery.

<u>An Approximate Rate of Return</u>

The financing for Dung Quat is to be the responsibility of Petro Vietnam, with $800 million in equity and the balance in bank and supplier loans and bond issues. These sources all have different costs of capital. For example, oil companies normally require equity to have a return after taxes of at least 15%, while dollar bond loans cost about 10%.

A rough calculation will show the likely cost and returns to the refinery. Suppose that Bach Ho crude costs $55 a barrel and heavier Middle Eastern crude costs $50, delivered. That is equivalent to $390 per ton, if the two crude oils are used 85%/15%, as stated to the National Assembly. Then the blended cost of 6.5 million tons of crude oil inputs to Dung Quat is $2.54 billion.

The blended value of products used in Vietnam is $15 a ton more than the value of inputs if they were only Bach Ho crude. That is Bach Ho crude is $55 a barrel or $396 per ton, plus $15 to $17 (the average import margin from Table I) so the product value is $413 per ton, if the 2000 to 2005 average is taken. That means the value of all 5.91 million tons of products is $2.44 billion, if the products are priced the same as the existing Singapore products at their typical price differential. That is, the value of all refined products, not counting the delivery charge to Haiphong and HCMC

[Singapore refined product imports] is actually less than the value of the crude inputs!.
The difference is $100 million. If we take delivery charges at $10 a ton, these cost a
further $59 million.. Thus, the operation of Dung Quat will not only return nothing for the
*$2.5 billion investment cost, but also cost over $150 million a year more in input costs
than the product is normally worth.*

An additional consideration is the interest charged to the project while it is under
construction. If we assume $500 million each year in construction costs from 2004 to
2008 and full production starting in 2009, the outlays during the construction period have
to be financed. If we take a 10% cost of capital and assume the spending is at mid-year of
each year, then the total cost with interest is $3.2 billion when production starts.

This calculation shows the economic rate of return, or the value of the refinery to the
economy. The financial rate of return could be higher if there were tariffs placed on
imported product. Then the price paid by consumers would be higher and the profit
margins to the refiner would rise. However, with many trade agreements including the
WTO restraining tariff setting, it is not likely that a very high tariff could be kept in place
after 2010. This restricts the ability of the government to shift the higher cost of refining
onto consumers. An alternative might be to give subsidies to the refinery, but this would
come at the expense of other desirable spending.

This means that the cost of Dung Quat is not only $3.2 billion (including interest) for
which there is no return, but also $150 million a year in excess costs (a lower value of
refined product less than input cost) which creates a total annual negative value of nearly
$500 million each year starting in 2009 and continuing on for many decades.

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Regional Development.

A major rationale for locating the refinery in Quang Ngai is that the central part of Viet Nam is poor and is not growing as rapidly as the areas around Hanoi and HCMC. Ex-Prime Minister Vo Van Kiet and Chairman of the Quang Ngai Peoples Committee Dr. Nguyen Kim Hieu have both defended Dung Quat on this basis. In June 2004, when the refinery was expected to operate in 2007, Dr. Hieu spoke to the Vietnam Economic Times. He noted that 37 projects had been licensed in the Dung Quat economic zone, with a total registered capital of $735 million. This does not include the oil refinery. He expected another 20 projects to be licensed worth nearly $200 million. Among the larger projects were a large shipyard, a steel laminating factory, a coal processing factory, and two electricity generating stations. Presumably, there will also be petrochemical and plastics factories, although he did not mention these. Actual investment as of the start of 2005 was miniscule, however well under $20 million outside of the oil refinery.

Of the factories mentioned, none require a refinery or even benefit markedly from being located next to it. While the port and infrastructure investment surely helps, the nearby Chu Lai free zone in southern Quang Nam province will also have a port, and it is only a few kilometers north of Dung Quat. The underutilized Da Nang port is about an hours drive north of Chu Lai on a good road. Even if all of the planned investments come into production, a single container port would serve the region much better than three smaller ones. The more containers in one place, the more often and more

phould serve vang becessive road tolls (formal and especially informal) and settling on a single major regional port would actually help accelerate regional development.

Indeed, if the rate of return to a normal investment is 10% a year in US$ (and this could be low), then a $3.2 billion investment (with interest) would normally produce $320 million in returns. As the actual investment produces a negative $150 million in a normal year, then the cost of investing in a poor project is $470 million each year. Suppose, instead of Dung Quat, investments in Central Vietnam in roads, water control, rural electrification, and credit for farming and small and medium enterprises would all be made at much higher levels than now. This, and improved education, is likely to be a better way to help these provinces, even if the returns to such investments were only 5% a year. Alternatively, a refinery could be placed in a better geographic location with a sales tax dedicated to funding investments in poorer provinces.

Another issue is if big projects like an oil refinery actually jumpstart a local economy. The record of such investments is poor. Big LNG plants in Indonesia seldom create much additional activity around the areas where they are located. The huge Hoa Binh hydroelectric station, in spite of having a good road to Hanoi, has very poor communities around it. Employment in the refinery is modest and relatively little local value added is normally created by supplier and repair industries. The argument that plastics production will allow downstream industries to be located on or near the refinery is partly correct, but misleading. The major value added comes from plastic product fabrication, and that is seldom done close to the petrochemical plant. It is often done close to final major markets, since transport costs are often critical. (For injection molded plastic parts used in electronics and autos, the production usually sets up close to the buyers, and these are not in Central Vietnam.) The likely associated output will be some capital intensive plastics

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production, and unrelated industries that would have set up with general infrastructure investment. The refinery itself will create very limited additional activity.

Questions

1. What arguments can you make for and against the Dung Quat refinery.
2. If $500 million has already been spent, is it economically wise to complete the refinery or to relocate it somewhere else.
3. Is there a national security argument for having a refinery somewhere in Vietnam. (Consider building additional storage capacity as an alternative.)
4. If you were arguing only for faster development of Central Vietnam and had $3 billion to invest, would it be at Dung Quat.
5. If foreign oil companies are willing to invest in a refinery elsewhere in Vietnam if they are allowed to sell oil products in Vietnam, should that option be considered. (Assume zero tariffs on oil imports and competition in oil product retailing.)
6. If Petrovietnam were a profit maximizing company, would it want to build a refinery in Vietnam. If so, where. (Again, assume zero tariffs on product imports.)

Appendix: <u>Oil Storage Costs</u>

If national security concerns drive the acquisition of a refinery, rather than economics, a reasonable question is if there are other ways to provide security. It is not clear why a local refinery is more reliable than refineries in neighboring nations (such as Singapore) that are legally bound to deliver fuel if crude oil is provided. Even so, it is reasonable to ask what storage of product would cost.

Oil can be stored in old oil tankers, above-ground tanks, or underground formations of rock or salt that are geologically appropriate. The US stores over 500 million barrels of oil (over 70 million tons) in salt domes. The normal cost of above-ground tanks is about $100 per cubic meter (1 cubic meter = 6.3 barrels = .88 tons) Underground facilities vary according to many specific characteristics, but those that are used tend to be no more expensive than above-ground tanks and can cost half as much.

However, the cost of older oil tankers may be the least expensive alternative. One old tanker holding 33,000 tons (240,000 barrels) of oil recently sold for just $2.1 million essentially scrap value. With many single-hulled tankers having to be retired by 2010 in US and European markets, it should be possible to buy as much oil storage capacity as needed for about $50 to $60 a ton. This is the capital cost of the storage facility.

In addition, there is the cost of interest on the emergency oil supplies. If 1 million tons were to be stored, the cost would approach $400 million for the oil product and $60 million for the ships. At 10% interest, the cost of providing 1 million tons of non-commercial storage would approach $50 million a year, if operating costs were included.

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Fulbright Economics Teaching Program   Case studies for Policy Analysis   Syllabus
Academic year 2005-2006

Fulbright Economics Teaching Program, HCMC

August Session, 2005
August 2 - 29, 2005

CASE STUDIES FOR POLICY ANALYSIS

Teaching Team:

David Dapice, Instructor
Nguyen Huu Lam, Instructor
Vu Thanh Tu Anh, Co-Instructor
Nguyen Hoai Bao, Tutor
Nguyen Quy Tam, Interpreter and Translator
Chau Van Thanh, Advisor

Class Meetings:

Tuesday and Thursday afternoon: 14:00 - 16:30.

Office hours:

Tuesday and Thursday afternoon: 16:40 - 18:00

Rationale:

Public policy has a very important role in the development of a country. However, public policy issues or problems are difficult to deal with. Dealing successfully with these issues and problems requires broader perspectives and high levels of integration of attitude, knowledge, experience, and skills. Moreover, the processes in dealing with public policy problems or issues are always complicated, because they are involved many different interest groups. Preparing for students dealing successfully with these issues and problems requires high levels of integration among knowledge from different subjects and competencies. Using case studies helps creating an environment for promoting systems thinking, making connections, integrating knowledge, and developing competencies to deal with real life issues and problems are very important for the success of people in the real life situation as well as in academic programs.

Overview:

This course is designed as a 20-hour program taught in four consecutive weeks (2.5 hours a class and two classes a week). This is an interactive course that uses case studies to make participants broaden their thinking and approaches in dealing with public policy issues and problems. Using the case study approach also aims to develop various skills needed for participants' success in the academic year as well as their future.

David Dapice, Nguyen Huu La m, Vu Thanh Tu Anh,
Nguyen Hoai Bao, Chau Van Thanh.

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Goals and Objectives:

After completed this course, students will be able to:

1. Discuss the complicated nature of public policy issues and problems, which lead to concern with a broader context of public policy decisions, and a better understanding of the Fulbright Economics Teaching Program.

2. Prepare and improve working and learning skills, such as learning, communication, teamwork, group decision-making skills.

3. Develop different approaches and disciplines to improve the quality of public policy decisions.

Evaluation:

1. Summary of individual preparation of Case A Tale of Three Airports (20%).
2. Group report on the case of A Tale of Three Airports (20%).
3. Summary of individual preparation of Case The Dung Quat Oil Refiner (20%).
4. Group report (one role) on the case of The Dung Quat Oil Refiner (20%).
5. Group report (government role) on the case of The Dung Quat Oil Refiner (20%).

This class is assessed basing on Satisfactory or Unsatisfactory. Satisfactory is

defined by total score of the
course equal or higher 60%.

Schedule:

Day Subjects

Aug. 2 Introduction to the Course; Get Acquainted.
Introduction to case study as a way to understand the Viet Nam economy.
Reading: Dapice, D., What is public policy.
Dapice, D., The new development paradigm.

Aug. 4   Public Policy in Vietnam Some Major Issues. Discussing about the case
of Dung Quat Oil Refiner
Reading: Dapice, D., The Dung Quat Oil Refiner
Dapice, D., Vietnams Economy: Success Story or Weird
Dualism. A SWOT Analysis.

Aug. 9   Learning with Case Studies.
A case study: A Tale of Three Airports.
Reading: Executive Summary: Economic Analysis of Public Projects.
Summary of individual preparation of Case A Tale of Three Airports
due.

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Aug. 11 A Case Study: A Tale of Three Airports. (Cont.).
Reading: Couger, D. G., Chapter 3: Removing creative barriers.
Creative Problem Solving and Seeking Creative Opportunities.

Aug. 16 Problem Solving and Decision Making Skills.
Reading: Lam, N. H., Leading group decision making, Leadership, Educational Publisher, Hanoi, 1997.
Group report on the case of A Tale of Three Airports due.

Aug. 18 Communication Skills.

Aug. 23 A Case Study: The Dung Quat Oil Refiner.
Summary of individual preparation of Case The Dung Quat Oil Refiner due.

Aug. 25 A Case Study: The Dung Quat Oil Refiner (Cont.).
Summary.
Group report (one role) on the case of The Dung Quat Oil Refiner due.

Aug. 29   *Group report (a government role) on the case of The Dung Quat Oil*
                 Refiner due.

David Dapice, Nguyen Huu La m, Vu Thanh Tu Anh,
Nguyen Hoai Bao, Chau Van Thanh.

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07/30/05

home.cd3wd.ar.cn.de.en.es.fr.id.it.ph.po.ru.sw

Fulbright Economics Teaching Program   Case Studies   The new development paradigm
Academic year 2005-2006

The New Development Paradigm

Why is there a division between old and new types of economic development. Basically, it is because several changes in the regional and world economies have led to a different type of growth process than in the past. The old model was built upon a national view of development with a strong direct state role in allocating capital and even dictating or engaging in various strategic industries. Typically, banks were directed to lend to favored firms or industries, often resulting in crony capitalism and/or bad loans, and thus very weak banks. Debt was preferred to equity, and direct foreign investment was often discouraged because it did not allow national champions to dominate the industry. These policies could work well for a time because of good macroeconomic policies, an export orientation, strong education, and high levels of savings and investment. However, they came under increasing pressure in the 1990s as several events acting together began to undermine the success of the model.

One factor was that after the end of the cold war, there began to be an explosion in the amount of private capital flows, including especially bank credit, to Asia. These flows were connected to economic slowdowns in Japan and Europe, and led to banks with limited experience in international borrowing expanding aggressively. The weak financial systems in the developing Asian economies were willing to borrow aggressively but lacked the controls to direct the money efficiently or with adequate risk controls. As the amount of debt increased, the precariousness of the

controls. As the amount of debt increased, the precariousness of the entire credit system became apparent and many of the banks tried to exit at once. Since they had lent short-term credits, they thought they could all terminate their loans and get their money back. However, since the money had been lent for long-term projects, the borrowers were unable to repay. They had assumed the loans would be rolled over and allow them time to recapture their investments. Mismatches of currencies as well as maturities and weak legal systems gave rise to a panic and hundreds of billions of dollars were withdrawn in a way that severely damaged the borrowing nations. These problems were worsened by rigid pegged exchange rates and dishonest reporting by central banks of foreign exchange reserves. The outcome of the sudden withdrawal of bank deposits was a sharp contraction in output in 1997-98 in many nations and large costs to restructure bankrupt financial institutions and other companies.

Another problem was the rise of China. China had devalued (or unified) its exchange rate in 1994 and was attracting large amounts of FDI aimed at manufactured exports. This occurred while ASEAN was facing a sharp decline in FDI and slowing exports. While China also began to import raw materials, the slowdown in export growth caused many other Asian nations to reexamine their old models and look for better or more relevant ones. This search, in Korea for example, gave rise to pressure on large industrial conglomerates (chaebol) to reduce debt, sell off loss-making divisions, improve accounting, and generally focus more on profits than sales. With these changes, there was also an increase in transparency and shareholder rights. This direction of change was not complete or true to the same extent in each country, but all were influenced and tended to move to some degree in this direction.

A third influence was the rise of the Internet and very cheap communications and improving transportation. This had several impacts. One was the rise of outsourcing, or exporting of service jobs to low-wage countries. This was especially true for telephone

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Fulbright Economics Teaching Program   Case Studies   The new development paradigm
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call centers and software, but extended even to skilled legal, accounting, financial, and medical jobs. (For example, X-Ray pictures could be analyzed remotely and tax returns could be prepared in India.) Another and perhaps immediately more important impact was that production tended to occur less in one location and instead was spread around in global value chains. Different pieces of production of a single product took place in several places, with each one tending to have a comparative advantage in its particular operation. It was usually multinational companies that coordinated this production, but some of these companies were themselves from developing Asian economies. The costs of this type of production were much lower than those in a single place. This was because of the efficiency of each piece of the chain and because the pace of technical change and especially transfer tended to accelerate, so those companies not connected to global technology know-how tended to fall behind. However, product design, quality control and marketing were also critical and better managed within the new framework.

The fourth trend was a worldwide tendency for lower trade barriers. As the old GATT gave rise to the World Trade Organization and regional trade agreements in South and Southeast Asia, Europe and North and South America, average tariff levels fell sharply. In order to get access to developed nation markets, developing countries committed themselves to provide other nations access to their own markets. Combined with lower trade and transport costs, it became much easier and cheaper to buy foreign goods than previously. This put pressure on domestic firms to become more efficient, not only in export markets but also in domestic ones. This further weakened the idea of national champions divorced from global technology and production.

champions divorced from global technology and production
chains. The fairly rapid (10-12% in dollars for developing Asian nations in the last ten
and twenty years) led to a greater trade/GDP ratio in virtually all nations and led to
more open economies.

The fifth trend did not start in the 1990s, but slightly earlier. As the Japanese yen
appreciated in the later 1980s, Japanese export-oriented FDI began to spread
throughout Asia. This gathered pace in the 1990s and led to a certain amount of
emulation from other relatively advanced Asian economies. This FDI supported many
of the trends described above, creating an important export constituency in many
developing nations. It also led to upgrading of ports and other infrastructure that were
able to allow even more exports when the IT boom in the later 1990s was fed by more
FDI.

Taken together, these trends created a different landscape than the one of the 1960-95
period. Instead of national champions, there were production networks. Instead of
national competitiveness, the locality or region was often more important. Instead of
self-sufficiency, low costs became a priority. Instead of basic literacy alone, advanced
skills became more relevant. Speed, efficient infrastructure and financial systems, and
administrative skill became more important than licenses, protection, cheap loans and
influence. This created the need for a different kind of government and different
government-private sector relationship. These inter-related and accelerating changes are
often called globalization and reflect a more connected world in which economic
actors are more tightly integrated. This includes Asian economies with each other, not
simply Asian economies with rich nations.

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Fulbright Economics Teaching Program	Case Studies	The new development paradigm
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Key Ingredients for Success in a Global Economy

If the world is different, and economic and political strategies need to be adjusted, what is needed. The old strategies of macroeconomic stability, education, reasonable exchange rates, high savings and investment, and prices close to international levels are not wrong. However, they need to be augmented with additional policies and institutions. In Yusufs Global Change and East Asian Policy Initiatives, the following additional policies or institutions are suggested:

1. An efficient legal system improves lowers costs and attracts long-term investors.
2. Institutions and rules that improve corporate governance and the rights of minority shareholders make it easier to raise funds for a variety of risky but potentially productive investments.
3. Institutions that improve financial system efficiency are critical. These range from good accounting, contract and securities law, and dispute resolution to competent regulation of banks and other financial intermediaries.
4. Institutions that provide a flow of high quality information lower transaction costs and improve accountability. This now includes access to the Internet.
5. Competition law and laws regarding mergers and acquisitions help define the ground rules for market interaction. Greater fair competition increases efficiency.

However, increasing exposure to global markets will also tend to

However, increasing exposure to global markets will also tend to increase the need for social safety nets. If workers are not helped to readjust after facing unemployment due to no fault of their own, they will tend to support protectionist measures. (This is true even though most unemployment is due to technological shifts rather than trade.) Since current public spending in Asia is low and populations will age, there will be future issues in public finance that need to be addressed. Over time, if tax/GDP ratios do not increase, it will be difficult to sustain the levels of social spending likely to be needed. In spite of these long-term issues, all Asian economies have learned from their recent crisis and now hold more foreign exchange reserves and less short-term debt. They are much less crisis-prone, though more progress is needed on improving banking supervision and regulation of securities markets. If the elderly lose their savings, the state will often face greater fiscal burdens.

Trade agreements have proliferated in the last 10-15 years. Analysis of the various agreements shows that the best is an aggressive WTO expansion that would benefit all member nations. If that is not possible, as wide a group as possible is the next best, assuming similar levels of liberalization. That is, an APEC (Asia Pacific Economic Cooperation, including parts of the Americas) grouping is better than ASEAN plus 3 (China, Japan, and Korea) is better than ASEAN plus 1, is better than ASEAN alone. Bilateral Trade Agreements can be helpful if they are subject to MFN (most-favored nation) and the concessions are extended to other nations. Basically, if narrow pacts are building blocks, they are desirable. If they become stumbling blocks to wider agreements, they are a negative.

As nations become more integrated, harmonization of the principles behind competition policy and anti-trust law becomes more important. This means that the laws follow a similar approach (equal treatment of foreign and domestic firms, for example) rather than be uniform. Thus, the laws might have different thresholds for monopoly or

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Fulbright Economics Teaching Program	Case Studies	The new development paradigm
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restraint of trade, but have a similar analytical approach. This harmonization of principles often requires new legislation and goes well beyond a similar tariff system or rules for food or drug safety that mark the normal trade agreement. Increasingly, financial regulation say the amount of capital needed for banks or the definition of bad loans is also subject to these considerations.

Education systems need to be retooled in two ways. In the traditional subjects, there needs to be an ability to tap into global knowledge and R&D. This requires circulation of professionals to other countries and access to recent research, mostly now through the Internet. Close links between universities, firms, and research institutes are also important. However, beyond scientists and engineers, there is a growing need for other skills. Accountants, auditors, risk specialists, underwriters, lawyers, regulators and related public administrators need to be trained and made aware of international standards and practices. Management and human relations skills will also be needed, as Howard Pack observes in the Yusuf Global Change book.

But getting the right skills is not enough if there is systemic corruption. While corrupt societies can grow fast for a while, it is often at the cost of growing social tension and inefficient investment patterns. Controlling corruption is a complex matter which involves a variety of approaches. It will be the subject of a separate class note, but certainly requires more than a simple attempt to punish the guilty. In a corrupt system, virtually all people with some position might be arrested and this is not possible. Therefore, these people seek to be protected by political

Therefore, these people seek to be protected by political alliances, but then This safe ution give rise to a feeling of impunity, worsening the problem. It requires a series of steps such as salary reform, whistleblower protection, a relatively active press, simple tax and regulatory systems, a rule of law and a variety of remedies so that the costs of corruption and the risks of being caught are seen as high, while the benefit of honesty is seen as preferable.

The rise of globalization has made the rewards to good policy higher and raised the costs of policy failures. If a society can get past a tipping point it is likely to realize this and there will be tremendous pressure on government, whatever the precise political system, to push for those policies that raise incomes and allow global technology and opportunity to increase growth rates. However, for those without a large middle class or with significant blocking coalitions of special interests, getting to that tipping point can be difficult. In such cases, it requires a determined effort to move policy in a productive direction.

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Fulbright Economics Teaching Program   Case Studies   What is public policy.
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What Is Public Policy.

This Fulbright School started as "The Fulbright Economics Teaching Program" or FETP. It basically took economics courses in theory and applied topics from good US programs and transplanted them here ten years ago. Over the years these courses have been modified to reflect conditions in Vietnam. Some have been shortened and some new courses have been added. In all cases, the object is to bring teaching closer to the reality that people face in making decisions in Vietnam.

Economics is a discipline that assumes rational thought and asks how a maximum amount of output can be produced from limited resources. It has basic ideas: People respond to incentives. Resources are scarce but wants are large. Supply and demand of a good respond to many variables, but each responds to price in opposite ways. [1]Economic growth requires good instituions to allow competing firms to discover and develop the right products and technologies so that productivity can increase. Trade increases specialization, competition, and well-being for most people. The role of government is to set rules so that the society can prosper and unwanted inequalities can be reduced or eliminated. Economics has a tremendous amount of insight and must be understood if a society is to grow fast and in a way that it wants to.

However, the real world is messier than most economic models and more complicated

than it used to be. "Open" economies have to deal with changes in world prices, trade and capital flows. A bad harvest in India might mean higher grain prices in Vietnam. Terrorism in the Middle East might mean high oil export prices -- and also higher prices for gasoline and diesel at the pump in HCMC. A country like Vietnam might decide to focus on coffee production and help to bring world coffee prices tumbling down! All these things can hurt some groups and help others. It is not easy to sort out what should simply be treated as normal weather (complain, but no action required) and which should be treated like a flood (flood some upstream rural districts and build up the barriers near the city). In order to sort out the answers, a local, national and global perspective - or a mix of these - is required. It also requires dealing with various interest groups.

Part of the messiness of the real world has to do with how real world decisions are made. Economists imagine a noble referee making rational decisions. In the real world, the referees are also playing the game! The rules are not exactly defined and seem to change. In fact, various interest groups argue for positions of benefit to themselves. These might be state or private enterprises, different provinces or cities, ministries, politicians, and others. To understand how decisions are made in fact is difficult. It is helpful to know the theory of how they should be made, and indeed if actual practices are close to those in theory, growth might turn out to be faster and more equitable.

Public policy analysis uses economics and other social sciences to understand how decisions are made and how they should be made. It tries to understand how interest groups interact with each other; how governments actually behave, and what policies are likely to help achieve the goals that the government and society set for themselves. There are parts of the analysis which are not yet taught much here - little, so far, has been taught in the

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[1]In most cases, a higher price means a lower quantity demanded but a higher quantity supplied.

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one-year program about the role of legal institutions and law. Nor do we yet teach the art of managing a public bureaucracy in which most workers will not be fired and cannot receive very high salaries. Nonetheless, we will teach many elements and tools which will help you understand parts of this large puzzle. You will learn economic theory, accounting and financial analysis. You will explore topics in trade, public finance, rural development, technology, development finance, and "marketing places." You will learn how to analyze a proposed project to see if (according to economic theory) it makes sense or not. You will learn statistical techniques that help improve forecasts, although better forecasts are not always welcome! You will learn how much of Asia developed in the past and how current development differs from that of most of the post-World War II period.

These skills and knowledge are combined with a teaching method in which the teacher's role is not only to lecture about some facts that are to be memorized, but also to guide discussion. No one person knows as much as everyone. Notice that YOU are sitting above the teacher, not below. Learning how to think critically, how to get new information and tackle problems that have not been specifically taught is one goal of this program. One skill you should learn here is how to use the Internet to get important information that might be hard to get any other way. Having a computer and a fast connection is like having a huge library at your fingertips -- especially if you can read some English. In order to arrive at good solutions requires an open and disciplined mind, able to get relevant information from many different groups, places and people, and a willingness to

tell the truth and argue for a solution that might not please everyone.
This is difficult and requires diplomatic as well as technical skills. Not everything can be taught!

The case study you have been given is based on a real situtation in Viet Nam. The new
airport in Dong Nai has been planned for a long time, and the Southern Airports
Authority argues that construction of phase I (costing $4 to $5 billion for that phase) of an
international airport for 40 million passengers should start in 2007 and finish in 2011. [2]
There will likely be 3.4 million international passengers in Tan Son Nhat in 2004, up
from 1.6 million in 1995. (Domestic passengers in 2003 were 2.1 million, up from 1.2
million in 1995; domestic passengers would continue to use the old airport.) The 1995
Master Plan estimated 21 million passengers at Tan Son Nhat, including domestic, in
2010, and argued for a maximum of 15 million passengers at Tan Son Nhat due to
congestion. That appears to be the basis of the current proposed construction [3]. All of the
messy complications described above apply in this case. There are many other cases like
it, and you might want to mention some that you know about at some point during the
year, and compare experiences with your classmates. Economic theory, statistics,
accounting, finance and project analysis will give you some of the answers. The rest you
will have to learn from each other, the professors, and yourselves. Good luck!

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[2]The old airport is getting a new terminal for 8-10 million passengers for $220 million. Another one or two
like it could be built, raising total capacity as high as 30 million, similar to Singapore and Bangkok.
[3]We attempted to discuss the new airport with the Southern Airports Authority but were told that all of
their people were "very busy" and not available.

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