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The Oil Syndrome and Economic Policy in Indonesia and Mexico

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Abstract

Indonesia and Mexico provide an interesting contrast with regard to economic performance during the oil boom in 1970s. In this paper, we attempt a comparison between Indonesia and Mexico in their policy responses to the oil boom with special reference to the dutch disease. Our results suggest that there exists a striking contrast in their adjustments, especially in their fiscal, foreign borrowing, and exchange rate policies, and confirms the conventional understanding that a booming government should be conservative, as was the case in Indonesia, in its macroeconomic management to avoid the dutch disease. Equally significant, investment use of oil revenues to strengthen the tradable sector is another factor responsible for Indonesian success.

Introduction

The oil price shocks of 1973-74 and 1979 resulted in a large transfer of wealth to oil-exporting countries. As the "two gap theory" states, the shortages of domestic savings and foreign exchange are considered as typical bottlenecks for economic development in developing countries. In this context, the windfall gains of the oil boom should have worked in favor of economic development in oil-export developing countries. It was observed, however, that the oil boom brought about adverse side-effects termed the "dutch disease," which refers to the negative effects that an export boom may have on traditional export sectors (tradable sectors) in many oil-exporting countries.

The mechanism of the dutch disease is clear enough: part of the oil revenues is spent on the non-tradable goods which leads to an appreciation of the real exchange rate, i.e., a rise in the relative price of non-tradable goods in terms of tradable goods,[1] which in turn draws resources out of the tradable sector into the non-tradable sector. This effect is termed "spending effect" in the dutch disease theory.[2] In applying the dutch disease theory for developing countries, we come across a frequently asserted question about the validity of the full employment assumption employed in the theoretical model. If a developing economy has substantial underemployment, neither the spending nor resource movement effects need occur. As non-tradable prices rise due to the spending effect, labour would be drawn into the non-tradable sector and moderate the price increase. And the resource movement effect could be avoided by the infusion from the labour pool/surplus labour without any loss in output in the other sectors. However, surplus labour is a very suspective concept in itself, there are few researcher who support the existence of large number of underemployed labour with marginal products close to zero.

A shrinking tradable sector should be a matter of grave concern for developing countries because they have to drive the development process through the expansion of tradable sector. Thus a booming economy finds itself on the horns of an unexpected dilemma: they enjoy boom revenues to boost economic development while those revenues in fact turn out to be responsible for the economic stagnation through the deterioration of the tradable sector.

Mexico is a relatively new oil exporter: oil export started in 1975, and an oil boom continued from the mid 1970s to the early 1980s. Evidence of the dutch disease emerged: Mexican tradable sectors, especially the manufacturing sector, contracted steadily during this boom period.[3] Indonesia experienced a similar oil boom and the government budget saw an

oil bonanza. Indonesia's economic achievements, however, are in sharp contrast to other oil-exporting countries including Mexico. Her non-oil export base expanded rapidly, and it is difficult to detect symptoms that the dutch disease theory predicts. A most comprehensive survey of this subject reveals Indonesia's remarkable performance in that it succeeded in avoiding a contraction of the non-oil tradable sectors.[4] Therefore, Indonesia and Mexico offer a good opportunity to examine the effects of policy responses to the oil boom. The comparative economic indicators are provided in Table 1.

This paper analyzes the Indonesian adjustments to the oil boom in comparison with those of Mexico. The two countries are similar both in being dependent on the primary sector including agriculture as the main source of non-oil exports and in the existence of a growing manufacturing sector. But they stand in striking contrast in their policy adjustments to the oil boom, especially in their fiscal, foreign borrowing, and exchange rate policies. The main purpose of this paper is to derive some suggestions for economic management policies which are required to avoid the dutch disease in developing countries by investigating the two countries' experiences. The paper is organized as follows: Section 2 provides a contrasting description of policy adjustments in Indonesia and Mexico, and Section 3 presents the major conclusions.

Table 1　Comparative Economic Indicators

		Indonesia	Mexico
Petroleum Export/Total Export (%)	1970	38.7	2.7
	1975	74.4	15.8
	1980	65.1	63.1
	1985	25.0	66.6
GDP Growth Rates	1970-1977	8.0	5.8
(real 1980 prices: %) #	1978-1983	6.4	4.6
Non-Mining GDP by Sectors (current prices: %)			
Agriculture	1970	49.7	12.5
	1975	39.4	11.5
	1982	32.7	8.2
Manufacturing	1970	9.3	24.2
	1975	11.1	24.1
	1982	16.0	23.6
Services	1970	41.0	63.3
	1975	49.5	64.4
	1982	51.3	68.3
Inflation (Consumer Price: %) #	1970-1977	18.1	13.9
	1978-1983	13.5	41.8
Money Supply (M2: %) #	1970-1977	40.6	36.6
	1978-1983	28.5	45.7
Current Account/Merchandise Export	1970	-26.4	-79.2
(%)	1977	-0.5	-40.3
	1983	-3.3	-69.7
Government Budget Revenue/GDP	1972	12.6	10.3
(%)	1975	17.2	12.2
	1980	21.9	15.8
	1982	20.3	16.1
Government Budget Expenditure/GDP	1972	14.9	13.4
(%)	1975	20.7	17.0
	1980	24.2	18.9
	1982	22.2	31.6
Government Budget Deficit/GDP (%)	1972	2.3	3.0
	1975	3.5	4.9
	1980	2.3	3.1
	1982	1.9	15.4
External Public Debt/GNP (%)	1973	33.5	10.2
	1982	21.1	32.7
Debt Service Ratio (%)	1975	14.3	41.1
	1982	16.5	44.4

Sources: IMF, International Financial Statistics.
Notes: #: Annual Average.

Policy Comparison of Indonesia and Mexico

1. Fiscal Response

Oil revenues accrued to the government budget through direct sales or taxes. Reflecting this fact, government fiscal revenues increased with the higher oil price in both countries (Table 1). Therefore, fiscal policy in face of the oil boom plays a substantial role in determining the impact of the oil boom on the economic structure. We examine two aspects of the fiscal responses, namely, the sterilization of the oil revenues, i.e., intertemporal expenditure allocation of the oil revenues, and the composition of public expenditure, i.e., how to spend the oil revenues.[5]

First, we analyze the macro impact of fiscal policy with special reference to its role in sterilizing the rapidly growing oil revenues, i.e., intertemporal expenditure allocation. In general, government expenditure mainly consists of spending on the non-tradable sectors such as construction, services, and on investments in protected sectors. In addition, personnel expenditure is another important component. All this spending directly increases the demand for non-tradables, and then, exerts an upward pressure on the real exchange rate. Furthermore, the rise in domestic absorption due to an expansionary budget

policy will create excess demand for the non-tradable goods, which results in the appreciation of the real exchange rate. Fiscal policy is the primary determinant of money supply and domestic absorption. Therefore, government budget stances during the oil boom play a crucial role in determining the degree of economic effect on economic structure implied in the dutch disease theory. First of all, we can find a striking contrast in their scales of budget surplus/deficit as percentage of GDP. The Mexican government expanded its budget expenditure at an extraordinary pace to implement highly ambitious development programs, which resulted in a huge budget deficit with affluent oil revenues. On the other hand, the budget deficit to GDP ratios in Indonesia was extremely small. This sharp contrast is of crucial significance in assessing the effect of the oil boom in both countries, because it indicates that Indonesia, unlike Mexico, deliberately accumulated oil revenues and avoided the expansionary effects potentially to be brought about by abundant oil revenues. Therefore, a proper appreciation of the Indonesian fiscal response will show the road to proper policy management to avoid the effects of dutch disease.[6] Having experienced the cumulative inflation caused by the deficit financing in the government budget in the 1960s,[7] the Indonesian government set a number of 'do's and 'don'ts' in the field of budgetary policy in pursuit of stable growth and development. The most important one was the introduction of "balanced budget principle." This new rule contributed significantly to economic recovery and stability until the early 1970s. During the oil export boom period when the government budget enjoyed huge oil bonanzas, however, adherence to this principle would have created a strong expansionary pressure in the domestic economy. Judging from the official budget data in Table 2, the government budget, net of the foreign borrowing, was on a near-exact balance for all the years during the oil boom. It should be remarked, however, that the term "balanced budget" used by the Indonesian government has a different meaning from that used by economists. In the economic sense, a balanced budget is defined as follows:

$$GTE - GTR \equiv \Delta DCGNB + \Delta DCG + \Delta FB - \Delta GD \equiv 0$$

where GTE: government total expenditure, GTR: government total revenue, $\Delta DCGNB$: change in borrowing from the non-bank public, ΔDCG: change in borrowing from the banking sector, ΔFB: foreign borrowing, and ΔGD: change in government deposit. In the Indonesian definition of a balanced budget, in contrast, foreign borrowing is accounted as a revenue item. Neglecting the borrowing from the non-bank

Table 2 Indonesian Budget Balances

(billion Rp.)

	Budget Data						*Monetary Data*			*Budget Surpluses*
							Changes in			
	Total Expenditure (1)	Total Revenue (2)	of which Oil Revenue (3)	Actual Budget Deficits [(2)-(1)] (4)	Foreign Borrowing (Dev. Rev.) (5)	Indonesian Budget Deficits [(4)+(5)] (6)	Claims to Government (7)	Government Deposits (8)	Government Net Position [(8)-(7)] (9)	(%) [(9)/(1)]
1971/72	541	428	112	−113	131	18	18	2	−16	−3.0
1972/73	736	590	199	−146	158	12	59	26	−33	−4.5
1973/74	1,164	968	345	−196	204	8	13	0	−13	−1.1
1974/75	1,978	1,754	973	−224	232	8	28	32	4	0.2
1975/76	2,730	2,242	1,249	−488	492	4	133	6	−127	−4.7
1976/77	3,684	2,906	1,619	−778	784	6	−33	104	137	3.7
1977/78	4,306	3,535	1,948	−771	773	2	140	235	95	2.2
1978/79	5,301	4,266	2,309	−1,035	1,036	1	175	193	18	0.3
1979/80	8,076	6,697	4,259	−1,379	1,381	2	−10	856	866	10.7
1980/81	11,716	10,227	7,020	−1,489	1,494	5	267	1,318	1,051	9.0
1981/82	13,918	12,213	8,628	−1,705	1,709	4	638	490	−148	−1.1
1982/83	14,356	12,418	8,170	−1,938	1,940	2	91	164	73	0.5
1983/84	18,315	14,433	9,820	−3,882	3,882	0	1,841	2,693	852	4.7

Sources; Bank Indonesia, Indonesian Financial Statistics.

Table 3　Government Expenditure Structure

	Indonesia				Mexico			
	Current Expenditure		Capital Expenditure		Current Expenditure		Capital Expenditure	
	(bill. Rupiah)	(%)	(bill. Rupiah)	(%)	(bill. Peso)	(%)	(bill. Peso)	(%)
1972	412.0	57.4	306.2	42.6	47.1	70.1	20.1	29.9
1973	694.9	63.0	408.1	37.0	62.4	70.8	25.7	29.2
1974	1282.1	69.1	574.2	30.9	92.5	74.7	31.4	25.3
1975	1519.1	58.6	1073.1	41.4	124.0	76.7	37.7	23.3
1976	1808.6	53.6	1565.9	46.4	158.7	75.0	53.0	25.0
1977	2113.5	57.9	1539.9	42.1	221.9	77.7	63.6	22.3
1978	2571.0	52.8	2299.8	47.2	275.9	75.1	91.6	24.9
1979	3958.7	54.4	3324.9	45.6	349.4	69.2	155.8	30.8
1980	5730.5	52.9	5095.3	47.1	506.6	67.5	243.6	32.5
1981	6882.6	48.3	7363.5	51.7	842.6	71.3	339.6	28.7
1982	6996.3	51.6	6572.7	48.4	2190.7	77.4	638.6	22.6
1983	8411.1	51.3	7971.0	48.7	3660.0	81.9	808.2	18.1
average		55.9		44.1		73.9		26.1

Sources: IMF, International Financial Statistics. Supplement on Government Finance (1986).

public, which is negligible due to the fact that the government does not issue bonds to the public, the following identity describes a balanced budget in the Indonesian sense.

$$GTE - \underbrace{(GTR + \Delta FB)}_{\text{budget revenue}} \equiv \underbrace{(\Delta DCG - \Delta GD)}_{\text{change in net position}} \equiv 0$$

This means that budget deficits are all financed by foreign borrowing and that there is no change in the government net position with respect to the banking sectors. No change in the government net position implies that the government budget is always neutral to the money supply. The budget data indicates that this relationship was maintained during the oil export boom period. It should be noted, however, that the monetary data, or the balance sheet of the banking sectors, in Table 2 shows quite different movements of the government net position for the same period. In the late 1970s when the oil revenues began to increase due to the second oil shock, the net position improved drastically through the increase in the government deposit. This fact has a distressing implication in assessing the Indonesian budget stance during the oil export boom: the implication which has largely been neglected in the literature related to the Indonesian fiscal policy. We argue that this improvement in the net position reflected an important fact: the accumulation of budget surplus under the guise of "balanced budget principle." The trick is how to accumulate the budget surplus under the balanced budget principle. A delicate procedure is necessary for the government to make this possible. It is conjectured that the procedure is just as follows: First, the government accounted expenditure, which was of course recorded under a certain expenditure item in the budget account. However, this expenditure was not actually expended, and transferred to the government account in the central bank, increasing the government deposit by the same amount. Through this procedure the government could build up the budget surplus without 'violating' the balanced budget principle. Many studies on the Indonesian fiscal policy have pointed out the importance of the balanced budget principle, but it seems that they have failed to recognize the economic impact of the covert operations in the Indonesian budget management. It can be said that the Indonesian government deliberately gave up the balanced budget principle in order to combat sharply accelerating expansionary pressures possibly brought about by the abundant oil revenues.

Next, we analyze the composition of the budget expenditure in both countries. Here, we must remind ourselves that budget expansion does not necessarily induce the tradable sector to shrink, if the government spends oil revenues to strengthen the tradable

sector. In the theoretical context, the first-best method would be to subsidize the tradable sector directly with funds from the oil revenues.[8] That is, the government policy as to how to spend the oil revenues is of crucial importance in assessing the effects of dutch disease. Comparing the composition of government expenditure in Table 3, we can find the crucial difference between the two countries in their relative shares of current and capital (investment) expenditure. The Mexican expenditure was biased toward current spending, while the share of capital expenditure in Indonesia had been maintained high. This simple fact suggests that the oil revenue in Indonesia was spent more on investment purpose compared with Mexico. In Mexico, however, public investment soared and the share of investment in GDP rose to 30 percent in 1981. This extraordinary expansion of the public sector investment brought about a sharp rise in imports, mostly of capital and intermediate goods, which resulted in a huge deficit in trade balance. However, the most important fact we should pay attention to here is the strong bias of the government investment toward the oil sector (Table 4). During the oil boom, the Mexican government spent most of the oil revenues in promoting oil production by investing heavily in the state oil company, PEMEX. This implies that the necessity to protect the tradable sector during the oil boom was to a large extent neglected by the Mexican government. This is clearly the reverse of what should have been done to avoid the effects of dutch disease. In contrast, as shown in Table 4, the Indonesian budget expenditure was more balanced: spent on infrastructure, social services, agriculture, and industry as well. The oil revenues went to agriculture and industry, i.e., tradable sectors to strengthen their production. The most arresting feature is found in her agricultural policy.[9] The Indonesian government consistently put a high priority on agricultural development, especially rice production, with considerable emphasis on research and extension (BIMAS), investment in irrigation, and subsidization of fertilizer. With the arrival of the Green Revolution, the Indonesian government spent the oil revenues on encouraging the intensive use of fertilizer in rice production, on which the new high-yielding rice varieties are very dependent. At the same time, the national logistic agency (BULOG) was given the right to intervene in the domestic rice market to keep the producer price of rice above the officially determined floor price. The fertilizer subsidy and price support of rice improved the fertilizer/rice price ratio, which gave a strong incentive for farmers to increase their fertilizer use. As a result, Indonesia achieved self-sufficiency in rice production in the mid 1980s. All these facts suggest that there exists an important difference in the composition of government spending between Indonesia and Mexico, and they also indicate that the investment use of the oil revenues to facilitate the growth of the tradable sector was one of the factors leading to the Indonesian success in avoiding the dutch disease.

Table 4 Capital Expenditure by Sectors (%)

Indonesia #	1975	1978	1979	1980	1981
Industry and Mining	8.9	8.0	8.9	8.3	11.9
Agriculture	18.4	17.6	12.7	15.7	13.7
Electric Power	9.2	10.6	9.4	7.3	7.6
Transportation	22.3	16.2	11.6	13.2	11.6
Regional Development	12.4	10.8	8.4	8.1	8.9
Education	8.2	9.8	9.0	9.7	10.5
Others	20.7	27.0	40.1	37.7	35.7
Total	100.0	100.0	100.0	100.0	100.0
Mexico ##	1975	1978	1979	1980	1981
Oil	20.5	51.9	52.9	49.1	55.9
Electric Power	28.8	22.1	22.6	22.2	19.3
Steal	4.5	0.8	1.1	1.7	2.0
Communication	17.5	7.5	5.7	5.5	4.8
Others	28.7	17.7	17.7	21.5	18.0
Total	100.0	100.0	100.0	100.0	100.0

Sources: Bank Indonesia, Indonesian Financial Statistics, Taniura (1989), Table 12, p. 73.
Notes: #: Development Expenditure by Sectors, ##: Public Investment by Sectors.

2. Foreign Borrowing

We examine the government attitude toward foreign borrowing during the oil boom period. The government is the biggest borrower and investor in both countries. Since fiscal deficits feed into current account deficits, which are financed either by foreign borrowing or by withdrawal of foreign exchange reserves, there exists a strong relationship between fiscal policy and foreign borrowing. In the short run, since an inflow of foreign money can be regarded as an income transfer just like an oil bonanza, an

increase of foreign borrowing during the oil boom is expected to bring about more severe stagnation of the tradable sector through still more expansion of domestic absorption. That is, if the government increases foreign borrowing during a boom, additional income transfer should require a more severe structural adjustment to the economy concerned. From the standpoint of revenue sterilization, one of the desirable adjustments is to repay formerly accumulated foreign debts instead of absorbing the oil revenues in the domestic economy. If this choice is unfeasible, the government could, at least, reduce their dependence on foreign borrowing in her revenues, i.e., substitute oil revenues for foreign borrowing. However, some countries increased their dependence on external borrowing during the oil boom, and sustained high rates of growth of domestic absorption. This resulted in more severe deterioration of the tradable sector through the additional appreciation of the real exchange rate. We can term this problem "boom based borrowing capacity": the borrowing capacity of the booming countries might be improved drastically because they turn out to be attractive customers of donor countries. This is why we have to pay due attention to the government attitude toward foreign borrowing during the oil boom period.

Backed with the huge oil revenues, Pertamina, Indonesian's state-owned oil company, expanded its activity to a variety of other areas such as steel plant, real estate, tanker fleet, resort hotel, fertilizer plant, and so on. To control this recklessly expanding activities, the government introduced a new regulation that stipulates that all state enterprises, including Pertamina, have to get an approval from the government to secure any medium- and long-term external loans to finance their projects. Pertamina responded to this regulation by shifting from medium- and long-term loans to short-term ones. In 1975, however, Pertamina defaulted on its short-term debt of more than US$ 10 billion.[10] This incident exerted a strong influence upon the Indonesian foreign borrowing strategy in the following oil boom years. In response to the Pertamina Crisis, the Indonesian government introduced two measures. First, official borrowing in the short-term market was prohibited. Second, neither the state nor the state enterprises could get any external loans without the permission by the Bank Indonesia and the Ministry of Finance. These regulations turned out to be beneficial to the Indonesian management of its external debts in the following oil boom period. In Table 5, we can find three characteristics of this conservative stance on foreign borrowing: relatively low interest rate, long maturities, and long grace periods. During the 1978-82 period Indonesia's ratio of short-term debts to imports never exceeded 18 percent, while Mexico's never fell below 30 percent. Since the short-term interest rate was usually below the long-term interest rate, short-term borrowing was preferred to long-term borrowing. In this case, however, debtors should accept the risk of a future upward movement of interest rate. The Indonesian low ratio of its short-term debts to imports resulted from the cautious management of external debts by policy makers, who were strongly influenced by the "Pertamina Crisis" and were able to absorb the policy lesson from this bitter experience. Despite the boom borrowing capacity, the total amount of foreign borrowing in Indonesia was well under control by the government, while Mexico accumulated its external debts, especially in its short-term debts. In Mexico, a sharp increase of foreign debts during the oil boom was deeply rooted in the current account deficits caused

Table 5　Debt Structure　(%)

Indonesia	1978	1980	1981	1982	1983
Debt Service/GNP	9.3	7.5	7.3	9.2	10.7
Debt Service/Ratio	25.0	12.6	12.9	16.5	18.4
Percentage of Short-term Debt #	9.9	13.3	14.4	18.1	15.6
Short-term Debt/Imports #	14.0	14.3	12.7	17.9	n.a.
Effective Interest Rate for all Debt #	17.5	15.5	16.6	16.1	14.6
Mexico	**1978**	**1980**	**1981**	**1982**	**1983**
Debt Service/GNP	12.0	14.1	15.5	24.8	17.4
Debt Service/Ratio	62.4	37.8	34.7	44.4	43.8
Percentage of Short-term Debt #	14.0	28.3	32.1	30.5	11.1
Short-term Debt/Imports #	33.5	48.9	55.9	76.7	n.a.
Effective Interest Rate for all Debt #	23.4	22.8	20.1	20.8	15.9

Sources: IMF, International Financial Statistics.
#: Woo, Glassburner and Nasution (1994), Table 10. 4. p. 124.

both by the government's highly aggressive development programs and by the capital flight on a large scale which reflected the lack of public confidence in the economic management by the government. In contrast with the Indonesian cautious debt management, the Mexican government expenditure grew much faster than their revenues, and the resulting expansion of domestic absorption produced widening deficits in their current account balances, which were financed by foreign borrowing. The government attitude toward foreign borrowing, which reflected the government's expectation of continuing increase in oil revenues, were the primary cause of the 1982 debt crisis, when Mexico defaulted with the sharp rise of the interest rate due to the disinflationary monetary policies in developed countries. It can be said that the Mexican government should have managed its external debts more cautiously during the oil boom period.

3. Exchange Rate Devaluation

The key parameter of the dutch disease is the real exchange rate. This directly implies that one of the policy options for the government is to devalue the currency in order to avoid or revise the appreciation of the real exchange rate. During the oil boom period, Indonesia and Mexico alike implemented currency devaluation. Since 1955, the nominal exchange rate in Mexico had been fixed for twenty five years at the level of 12.5 pesos per US dollar. The real exchange rate had appreciated continuously during this period due to the inflation deference between her trade partners, which deteriorated its current account deficits and increased its external debts. From 1974 to 1976, the public debt rose from US$ 11 billion to US$ 21 billion. This jump partially reflected the growing capital flight: the error and omissions in the balance of payments increased from a negative US$ 479 million to a negative US$ 3 billion in the same period. In face of this substantial disequilibrium in the external sector, the Mexican government devalued the peso in 1976 to 19 pesos and, in 1977, to 22.6 pesos. On the other hand, in Indonesia, the exchange rate was devalued from 415 rupiahs per US dollar in 1978, the level at which it had been pegged since 1971, to 625. This devaluation, however, was not inspired by balance of payments' considerations because Indonesia's foreign exchange reserves stood at US$ 2.2 billion, the highest level in her history, and the trade balances represented a surplus of US$ 7.4 million during the second quarter of 1978. The Indonesian policy was motivated primarily to improve the profitability of the tradable sector which had been under increasing cost pressure due to higher inflation under the fixed exchange rate.[11] In both cases, even if their motivations were different, the purposes of the currency devaluation was to generate real depreciation (decrease in the relative price of the non-tradable to tradable goods), and in turn to change the allocation pattern of resources to support the development of the tradable sectors. In this connection, sustainability of the devaluation effect on the real exchange rate is of great importance, because economic agents will be reluctant to invest in the tradable sector without their confidence in the government's ability to maintain the new exchange rate. If they find, after devaluation, a fast or steady erosion of the devaluation effect on the real exchange rate, they are unlikely to recognize the real depreciation due to the devaluation as a reliable signal which they depend on in determining their decision making. A number of empirical studies have also found that devaluation accompanied by demand management policies is fairly successful.[12] A sustained devaluation effect, i.e., the success of devaluation, depends largely on the macroeconomic policies accompanying the devaluation.

As shown in Table 6, after the 1976 and 1977 devaluation, especially in 1980 and 1981, the real exchange rate in Mexico showed a sharp appreciation.[13] This appreciation was rooted in the government budget expansion in pursuing ambitious development programs. Contrary to the theoretical claim, the Mexican government failed to implement the appropriate demand management policies needed to sustain the devaluation effect. The situation worsened in the early 1980s, when the world interest rate began to rise and the oil price started to decline. An adjustment in macroeconomic policy, including an extensive budget cutback and a realignment of the exchange rate, was in order. The Mexican government, however, did not adopt this type of conservative policies, and maintained its expansionary stance

Table 6　Real Exchange Rates for Indonesia and Mexico

	Industrial Countries EUV #	Indonesia			Mexico		
		Consumer Price	Nominal Exchange Rate	Real Exchange Rate ##	Consumer Price	Nominal Exchange Rate	Real Exchange Rate ##
	(1975=100)	(1975=100)	(1975=100)	(1975=1.00)	(1975=100)	(1975=100)	(1975=1.00)
1970	51.6	41.3	87.4	0.92	56.5	100.0	1.10
1971	54.5	43.1	94.4	0.84	59.7	100.0	1.10
1972	59.7	45.5	100.0	0.76	62.6	100.0	1.05
1973	72.1	59.9	100.0	0.83	70.2	100.0	0.97
1974	89.8	84.4	100.0	0.94	86.6	100.0	0.96
1975	100.0	100.0	100.0	1.00	100.0	100.0	1.00
1976	99.7	120.4	100.0	1.21	115.7	123.4	0.94
1977	107.8	133.5	100.0	1.24	149.2	180.6	0.77
1978	121.5	144.3	106.5	1.12	175.4	182.4	0.81
1979	140.3	170.1	150.1	0.81	207.1	182.1	0.79
1980	159.2	196.4	151.1	0.82	261.8	183.6	0.90
1981	153.2	220.4	152.2	0.94	334.8	196.1	1.11
1982	147.8	241.4	159.4	1.02	532.2	451.2	0.80
1983	142.8	269.9	219.1	0.86	1074.3	960.8	0.78
1984	138.9	297.9	247.2	0.87	1775.9	1342.4	0.95
1985	138.4	312.1	267.6	0.84	2801.0	2055.2	0.98

Sources: IMF, International Financial Statistics.
Notes: #: Export Unit Value of Industrial Countries.
##: Real Exchange Rate= (Consumer Price)/(Export Unit Value of Industrial Countries* Nominal Exchange Rate).

on macroeconomic management, which resulted in a sharp increase of foreign borrowing. This reckless government attitude awakened a growing negative expectation regarding the sustainability of the economic management, which in turn triggered off a massive capital flight. Devaluation increased the cost of foreign debt service in terms of peso, and caused the government budget to deteriorate further. Still more, this prompted a widespread fear that the government might default, which generated a suspicion of a continuing need of devaluation and, thereby, further capital flight. All of these stories suggest that the Mexican government failed to sustain the devaluation effect, or, more accurately, that the devaluation in 1976 and 1977 turned out to be ineffective in avoiding the dutch disease owing to a lack of appropriate demand management policies. On the other hand, the 1978 devaluation in Indonesia effectively reduced the real exchange rate and that its effect, even if gradually eroded, was maintained until 1982. In spite of the gradual erosion of the devaluation effect on the real exchange rate, this devaluation is widely regarded as an example of successful policy management in avoiding the effect of the dutch disease. A decided difference regarding to the devaluation effect between Indonesia and Mexico exists in their macroeconomic policies which accompanied devaluation. The Indonesian government did implement appropriate demand management policies such as accumulation of budget surpluses, as described in the earlier part of this paper. These policy adjustments suggest that Indonesia responded to the oil export boom in a manner consistent with the policy adjustments which are required to avoid the dutch disease.[14] It seems that the 1978 devaluation gave a clear signal for the public to invest in the non-oil tradable sector. There has been an interesting puzzle: the dutch disease theory predicts that the oil boom must be accommodated by real appreciation, yet Indonesia devalued its currency during the boom period while simultaneously running a "balanced budget principle." Now we can solve this puzzle. The answer is that the Indonesian budget was not really balanced but rather that a surplus was covertly accumulated by delicate procedures. This deflationary fiscal stance succeeded in avoiding a quick erosion of the devaluation effect on real exchange rate.

Major Conclusions

In this paper we have made a comparison of Indonesia and Mexico in their policy adjustments to the oil boom. The major findings of this paper can be summarized briefly. (1) While Mexico adopted a highly expansionary fiscal policy aimed at rapid development, Indonesia deliberately accumulated budget surpluses under the guise of "balanced budget principle" with delicate operations: the Indonesian government wisely avoided the expansionary effects potentially to be brought about by the abundant oil revenues. This difference suggests that Indonesia succeeded in sterilizing a part of the oil bonanza, while the Mexican government spent all of the oil revenues indiscriminately, and, still more, accelerated its spending by heavy foreign borrowing. (2) As for the composition of the government expenditure, we have found that Indonesian budget expenditure was more balanced and went largely into the non-oil tradable sector, while Mexican expenditure was strongly biased toward investment in the oil sector. This contrast implies that Indonesia used its oil revenues to strengthen the production base of the tradable sector such as agriculture and manufacturing which could have been possibly damaged by the dutch disease effect. A typical case can be found in its agricultural policies. (3) In foreign borrowing, there existed a marked contrast. Mexico accumulated its external debts, especially short-term debts, with the need to finance the current account deficits which were largely attributable to fiscal expansion, and capital flight. By contrast, Indonesia maintained a conservative stance on its foreign borrowing strategy. Indonesia made the best of their bitter experience, the Pertamina Crisis, in the following boom years. (4) Both countries devalued their currencies during the oil boom. While Mexico failed to sustain the devaluation effect due to inappropriate economic management, Indonesia succeeded in maintaining the effect with appropriate demand management policies such as building up of budget surpluses. It can be summed up that Indonesia responded to the oil boom in a manner consistent with the policy adjustments which are required to avoid the dutch disease, which was in clear contrast to the Mexican adjustments.

Many problems of oil exporting countries can be seen as issues relating to how to manage economic rent stemming from oil production. In this context, the dutch disease in such countries is the issue of how to deal with the upward fluctuation of oil rent. More precisely, it can be said that the dutch disease sheds light on the difficulty the government has in managing short term oil rent which arise from the export boom, without losing consistency with its long-term objective of promoting economic development through the expansion of non-oil tradable sectors. Government policies in the face of an oil boom, therefore, are particularly decisive in avoiding the negative impact of the dutch disease. Our comparative analysis of Indonesia and Mexico clearly confirms the conventional understanding that a booming government should be conservative in its macroeconomic management in order to avoid the dutch disease. In general, these adjustment are unfeasible alternatives for developing countries, because they imply giving up boom revenues, at least in the short-term.[15] Before the boom, limited budget revenues and foreign exchange played a crucial role in government resisting the demand from a variety of constituencies for increased public expenditure. Revenue sterilization, therefore, requires a long-term perspective and bureaucratic power on the part of the government against the pressure for enjoying a bonanza in the short run. Even so, our results strongly suggest that the government in face of an export boom should be conservative, as was the case in Indonesia, to escape from the negative impact of the dutch disease. Equally significant, the another lesson from our analysis is that investment use of boom revenues to strengthen the tradable sector is an appropriate response to avoid the dutch disease, which is a factor responsible for Indonesian success.

Notes

1) Although boom revenues are spent in the tradable sector, they do not lead to a rise in tradable prices, which are determined in the world market.
2) In the dutch disease literature, there exists another effect termed "resource movement

effect." The increased profitability of a booming sector bids up the prices of factors of production, which results in a contraction of tradable sectors due to the reduction in production factors. If a booming sector is an "enclave" in the economy, as is the case for Indonesian and Mexico, it eliminates this effect. This is why we limit the scope of our analysis only to the spending effect in this paper. See Corden and Neary [7], Neary [15], and Usui [20] for the various types of theoretical model of the dutch disease.

3) See Taniura [18] for detailed analysis of the contraction of manufacturing sector in Mexico during the oil boom.

4) Gelb [10] concluded that Indonesia has been the most successful in using oil revenues to strengthen agriculture and industry in his comparative study of seven oil export developing countries such as Algeria, Ecuador, Indonesia, Iran, Nigeria, Trinidad & Tobago, and Venezuela.

5) In the dutch disease literature, how to spend boom revenue has not been received due consideration with only exception of Van Wijnbergen [23].

6) See Usui [19], [20] for detailed analysis of the Indonesian fiscal responses to the oil boom.

7) For earlier empirical work of this issue, see Aghevli and Kahn [1].

8) In his theoretical analysis, Van Wijinbergen [23] succeeded in explaining the optimality of increasing subsidy payments to the tradable sector to avoid the effect of dutch disease.

9) See, for example, Booth [4] and Glassburner [11], for detailed analysis of the Indonesian agricultural policies in this period.

10) See especially Robison [16] for detailed analysis of the Pertamina Crisis from a viewpoint of its political economy implication.

11) See Warr [24] for the motivation of this devaluation. The currency devaluation for protecting the tradable sector is termed "exchange rate protection" by Corden [6].

12) See, for example, Connolly and Taylor [5].

13) In Table 6, consumer price index (CPI) is used as a proxy for the non-tradable price, because it mainly consists of non-tradable commodities.

14) Usui [20], [21] analyzed the effect of two policy adjustments, namely the 1978 devaluation and accumulation of budget surpluses, to the oil boom in Indonesia by using a simple simulation model. The results confirmed that the two policies were consistent from a macroeconomic management point of view and have contributed to avoid the long-run effect of the dutch disease.

15) See Roemer [17] for the detailed description about the difficulties of successful sterilization of boom revenues in developing countries.

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References

[1] Aghevli, B.B., and M.S. Kahn, (1977): Inflationary Finance and the Dynamics of Inflation: Indonesia 1951-72. *American Economic Review*, 67, 390-403.

[2] Arndt, H.W., and R.M. Sundrum, (1984): Devaluation and Inflation; The 1978 Experience. *Bulletin of Indonesian Economic Studies*, 20, 83-97.

[3] Asher, M.G., and A. Booth, (1992): Fiscal Policy. in: A. Booth, (ed.): *The Oil Boom and After: Indonesian Economic Policy and Performance in the Soeharto Era*. Oxford University Press, Oxford, 41-76.

[4] Booth, A., (1988): *Agricultural Development in Indonesia*. Allen and Unwin, Sydney.

[5] Connolly, M., and D. Taylor, (1976): Testing the Monetary Approach to Devaluation in Developing Countries. *Journal of Political Economy*, 84, 849-859.

[6] Corden, W.M., (1982): Exchange Rate Policy and the Resource Boom. *Economic Record*, 58, 18-31.

[7] Corden, W.M., and J.P. Neary, (1982): Booming Sector and De-industrialization in a Small Open Economy. *Economic Journal*, 92, 825-848.

[8] Dornbusch, R., (1993): *Stabilization, Debt, and Reform: Policy Analysis for Developing Countries*. Harvester Wheatsheaf, London.

[9] Dornbusch, R., and F.L.C. Helmers, (eds.), (1988): *The Open Economy: Tools for Policymakers in Developing Countries*. Oxford University Press, Oxford.

[10] Gelb, A., (1986): Adjustment to Windfall Gains: A Comparative Analysis of Oil Exporting Countries. in: Neary, J.P., and Van Wijnbergen, S., (eds.): *Natural Resources and the Macroeconomy*. Basil Blackwell, Oxford, 54-93.

[11] Glassburner, B., (1985): Macroeconomics and the Agricultural Sector. *Bulletin of Indonesian Economic Studies*, 21, 51-73.

[12] Lewis, S.R., (1989): Primary Exporting Countries. in: Chenery, H. and T.N. Srinivasan, (eds.): *Handbook of Development Economics Vol.* 2. North-Holland, Amsterdam, 1541-1600.

[13] McCawley, P.T., (1980): Indonesia's New Balance of Payments Problem: A Surplus to get rid of, *Ekonomi dan Keuangan Indonesia*, 28, 39-58.

[14] Morgan, D.R., (1978): Fiscal Policy in Oil Exporting Countries 1972-78, *IMF Staff Papers*, 26, 55-86.

[15] Neary, J.P., (1985): Real and Monetary Aspects of the Dutch Disease. in: Jungenfelt, K., and D. Hague, (eds.): *Structural Adjustment in Developed Open Economies*. Macmillan Press, London, 357-391.

[16] Robison, R., (1986): *Indonesia; The Rise of Capital*. Allen and Unwin, Sydney.

[17] Roemer, M., (1983): Dutch Disease in Developing Countries: Swallowing Bitter Medicine. in: Lundahl, M., (ed.): *The Primary Sector in Economic Development*. Croom Helm, London, 234-252.

[18] Taniura, T., (1989): The Effect of the Oil Boom on the Mexican Economy, (in Japanese), *Ajia Keizai*, 30, July, 57-76.

[19] Usui, N., (1995): Policy Adjustments in Indonesia during the Oil Export Boom: A Few Puzzles in its Fiscal and Monetary Policies, *Technical Bulletin of the Faculty of Horticulture* (Chiba University), 49, 223-231.

[20] Usui, N., (1996): *Policy and Strategy against the Dutch Disease in Developing Countries: A Case Study of the Oil Boom in Indonesia*, (in Japanese), Ph D. Dissertation, University of Tokyo.

[21] Usui, N., (1996): Policy Adjustments to the Oil Boom and their Evaluation: The Dutch Disease in Indonesia, *World Development*, 24, 887-900.

[22] Usui, N., (1996): Political Economy of Economic Adjustments to the Oil Boom: A Story of Indonesian Success, *Vision* (Forum for Development and International Studies, Jakarta, Indonesia), 1(2), 1-3 and 8.

[23] Van Wijnbergen, S., (1984): The Dutch Disease: A Disease after all?, *Economic Journal*, 94, 41-55.

[24] Warr, P.G., (1986): Indonesia's Other Dutch Disease: Economic Effects of the Petroleum Boom, in: Neary, J.P., and Van Wijnbergen, S., (eds.): *Natural Resources and the Macroeconomy*. Basil Blackwell, Oxford, 288-320.

[25] Warr, P.G., (1992): Exchange Rate Policy, Petroleum Prices, and the Balance of Payments, in: A. Booth, (ed.): *The Oil Boom and After: Indonesian Economic Policy and Performance in the Soeharto Era*. Oxford University Press, Oxford, 132-158.

[26] Woo, T.W., Glassburner, B., and A. Nasution, (1994): *Macroeconomic Policies, Crises, and Long-Term Growth in Indonesia*, 1965-90. The World Bank, Washington, DC.

オイル・シンドロームと経済政策
—インドネシアとメキシコ—

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摘　要

本稿は発展途上国において輸出ブーム現象が誘発する構造調整問題，すなわちオランダ病を回避するために如何なる政策対応が求められるのかを明らかにするため，1970年代に原油ブームを経験し，しかも対照的な経済パフォーマンスを示したインドネシアとメキシコの経済運営に関する比較検討を行ったものである．両国の経済運営にはいくつかの相違点が存在し，特に政府財政，対外借入ならびに為替レート政策に対照的な点が見い出された．

メキシコは潤沢な原油収入が存在するなかで野心的な開発政策を展開し，財政ならびに貿易収支の赤字を拡大させ，結果的に政府の経済運営に対する信認が失われるなかで生じたキャピタル・フライトをファイナンスするため対外借入への依存度を増大させた．また，対外不均衡を解消するため為替切り下げを実施したものの，適切な需要管理政策が欠落したために，その効果は限られたものとなった．こうしたメキシコの状況に比べ，インドネシアの政府財政ならびに対外借入のあり方は比較的コンサーバティブであり，しかもこれらの対応は同時に実施された為替切り下げと整合性を有するものであった．メキシコが製造業部門の停滞というオランダ病の兆候を見せる一方で，インドネシアがオランダ病の影響を回避しえた理由のひとつは，こうしたマクロ政策対応の相違にあるものと考えられる．

また，メキシコにおいては原油収入の多くが石油生産拡大のための公共投資という形で用いられたのに対し，インドネシアではオランダ病の影響を受けると考えられる製造業ならびに農業といった貿易財部門への投資として用いられた．原油ブームによる収入が貿易財部門の供給能力を増大する形で用いられたことが，インドネシアの成功のもうひとつの要因と考えられる．

両国の比較分析を通じて得られる知見は，オランダ病の影響を回避するためには当該国の政策当局は輸出ブーム収入の短期的棚上げを含めたより慎重なマクロ経済運営を行う必要があるということ，ならびに輸出ブームによる収入を長期的観点から貿易財部門を中心にその生産基盤を強化する形で用いるべきであるという二点である．