MIMAP
Micro Impacts of Macroeconomic Adjustment Policies
PHILIPPINES
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Project Updates

Vol. VI No. 1 March 1999

An Analysis of the Social Impact of the Financial Crisis in the Philippines*

SINCE THE PESO STARTED ITS FALL in July 1997, the Philippine economy has been feeling a backlash. This has been aggravated by the onslaught of the El Niño weather phenomenon, which started in September 1997 and lasted for one year.

The impact of the crisis was not immediately felt in 1997. Although a deceleration in the economy was already evident towards the latter part of the year in view of the slowdown in the services and industry sectors and compounded by the decline in the agricultural sector due to the El Niño, gross domestic product (GDP) nonetheless still managed to grow by 4.9 and 4.8 percent, respectively, during the third and fourth quarters of 1997.

The effects, however, became more visible in 1998. During the first quarter, agriculture contracted by 3.6 percent as the El Niño worsened. The industry sector grew by only 1.3 percent as the manufacturing subsector which accounts for 70 percent of the sector grew merely by 1.3 percent. Construction contracted by 4.4 percent as the real estate sector suffered from high interest rates. In the second quarter, the economy contracted for the first time since the first quarter of 1993, with GDP declining by 1.2 percent. By the fourth quarter of the year, GDP further decreased to -1.9 percent (Table 1).

How do these figures affect the well-being of the population, especially the disadvantaged groups?

The contraction in the domestic economy has, for one, resulted in unemployment for some segments of the population and, in turn, reduced incomes for others. Official statistics in fact show that the number of workers affected due to closure of or retrenchment in business establishments rose from 59,861 in 1997 to 155,198 in 1998 (Table 2). Prices of most goods have also gone up, implying lower purchasing power for a number of Filipinos.

Said reduced incomes and the corresponding adverse impact on purchasing power may have detrimental effects on the welfare status of some segments of the population in terms of their health, nutrition, and educational conditions. Unfortunately, as of this writing, data on social outcomes are not yet available.

Given this, it will be useful to explore the application of the framework and economic models developed by the Micro Impacts of Macroeconomic Adjustment Policies (MIMAP) Project–Philippines to as-

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*Based on the findings of the research on "The Social Impact of the Regional Financial Crisis in the Philippines" by Celia M. Reyes and Anne Bernadette E. Mandap, Project Director and Research Associate, respectively of the Micro Impacts of Macroeconomic Adjustment Policies (MIMAP) ProjectûPhilippines. Revised in February 1999.

WHAT'S INSIDE

MIMAP Institutionalizes Household Models at NEDA

The Micro Impacts of Macroeconomic Adjustment Policies (MIMAP) Project Management Office (PMO), in coordination with the Social Development Staff (SDS) of the National Economic and Development Authority (NEDA), conducted a four-day training workshop on the use of the MIMAP quantitative models last February 16-19. The workshop is part of MIMAP's commitment to share the analytical tools which the Project has developed in recent years and designed to enhance the economic modelling capability of the SDS–NEDA staff.

The training consisted of lectures on the various modelling components of MIMAP, namely, macroeconometric model with an income distribution bloc, financial computable general equilibrium (FCGE) model, and household models on education, health and nutrition. The lectures were highlighted by the presentation of the following applications of these models for policy analysis:

- *The Philippine Tariff Structure: An Analysis of Changes, Effects and Impacts*
- *Structural Adjustment, Stabilization Policies and Income Distribution in the Philippines: 1986-1996*
- *Simulating the Impact of Macroeconomic Policy Changes on Macronutrient Availability in Households*
- *Macroeconomic Policy Change and Household Health Outcomes: A Simulation of the Impact of the 1990-2000 Tariff Reform Program on the Demand for Outpatient Care in the Philippines*
- *A Probit Model of School Attendance for Children 7 to 14 Years Old*
- *The Social Impact of the Regional Financial Crisis in the Philippines*

Leading the list of lecturers during the workshop were Dr. Celia Reyes and Dr. Caesar Cororaton, Project Director and Assistant Project Director of MIMAP, respectively. Other guest lecturers were MIMAP economic modellers, Dr. Josef Yap and Dr. Aniceto Orbeta, Jr.

Hands-on exercises using the user-friendly MIMAP models being

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MIMAP Completes Second Survey in Bulacan

In line with MIMAP's objective to institutionalize a monitoring system that would help determine the impacts of macroeconomic adjustment policies on vulnerable groups in society, the Project Management Office (PMO) undertook the second round of minimum basic needs (MBN) survey in Barangays Masusô and Real de Cacarong in Bulacan. For the past three to four years, the MIMAP staff had been doing extensive studies on these sites, including the pilot test survey of a proposed community-based monitoring system developed by the MIMAP in these barangays in 1995 and 1996.

The survey covered 492 households in Barangay Masusô and 122 households in Barangay Real de Cacarong. The results of the survey will be used to analyze the present situation and welfare of the barangay residents on the basis of their minimum basic needs as well as compare them with the baseline data obtained from the pilot surveys conducted in 1995 and 1996. The survey results will also help the MIMAP assess the effects of the recent Asian financial crisis on the welfare status of the barangays and their residents.

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sess the likely impacts of the Asian financial crisis on the income, health, nutrition, and education status of population sub-groups in the country.

The MIMAP Framework

What is the MIMAP framework? How does it work? What does it attempt to show?

The MIMAP framework identifies three channels by which adjustment policies affect the well-being of households, namely,

- relative prices,
- income or purchasing power, and
- access to (or lack of it) resources such as public goods.

Policy analysis using this framework is aided by specific MIMAP quantitative models—the macro-econometric model with an income

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TABLE 1: GNP AND GDP GROWTH RATES BY INDUSTRIAL ORIGIN, 1997-1998

Sector	1997					1998				
	Q1	Q2	Q3	Q4	Average	Q1	Q2	Q3	Q4	Average
Agriculture	4.9	1.8	0.4	4.1	2.9	-3.6	-11.5	0.0	-1.2	-6.6
Industry	5.1	7.6	6.4	5.6	6.1	1.3	-1.5	-0.7	-1.9	-1.7
Service	6.1	5.7	5.6	4.6	5.5	4.9	3.6	-3.1	-7.8	3.5
Gross domestic product	**5.5**	**5.6**	**4.9**	**4.8**	**5.2**	**1.6**	**-0.8**	**-0.7**	**-1.9**	**0.1**
Gross national product	**5.4**	**5.3**	**5.2**	**5.3**	**5.3**	**2.0**	**-0.3**	**0.0**	**-1.2**	**-0.5**

Source: National Statistical Coordination Board

TABLE 2: ESTABLISHMENTS RESORTING TO CLOSURE/RETRENCHMENT DUE TO ECONOMIC REASONS AND WORKERS AFFECTED: PHILIPPINES, 1996-1998

Year	Number of Establishments				Number of Workers Affected			
	Total	Closure	Retrenchment	Rotation, etc.	Total	Permanent Layoff	Temporary Layoff	Rotation, etc.
1996[a]	**1,077[a]**	**361[a]**	**736[a]**	**39[a]**	**80,701**	**47,008**	**29,487**	**4,206**
First quarter	336	75	279	12	20,708	14,020	5,248	1,440
Second quarter	276	72	213	10	19,615	8,611	10,667	337
Third quarter	347	120	234	19	23,904	15,629	6,661	1,614
Fourth quarter	252	94	173	5	16,747	8,748	6,911	815
1997[a]	**1,103[a]**	**320[a]**	**790[a]**	**46[a]**	**59,861**	**37,914**	**18,501**	**3,446**
First quarter	309	106	215	14	15,848	12,201	2,596	1,051
Second quarter	271	78	201	12	17,265	9,260	7,177	828
Third quarter	289	63	255	9	11,740	7,168	3,802	770
Fourth quarter	337	84	268	14	15,008	9,285	4,926	797
1998[a]	**3,776[a]**	**657[a]**	**2,798[a]**	**321[a]**	**155,198**	**76,726**	**50,744**	**27,728**
First quarter	1,172	255	829	88	52,191	22,844	20,739	8,608
Second quarter	823	148	591	84	31,661	17,079	8,703	5,879
Third quarter	968	134	751	83	45,218	22,332	14,345	8,541
Fourth quarter	813	120	627	66	26,128	14,471	6,957	4,700

[a]Details may not add up to total due to multiple reporting
Source: Bureau of Labor and Employment Statistics

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distribution bloc, the financial computable general equilibrium (FCGE) model, and the household models on nutrition, health and education.

The macro model is designed to analyze the short-run effects of policies on income distribution and sectoral prices. The FCGE is meant to study the medium- and long-run effects of policy changes on relative prices, resource allocation and income distribution while the household models are used to trace the effects of macro policy changes on household decisions.

For purposes of analyzing the effects of the crisis on the social welfare of various population segments, this paper uses the macro model with an income distribution bloc and the household models.

TABLE 3: IMPACT OF THE FINANCIAL CRISIS ON INCOME OF HOUSEHOLDS BY DECILE, 1998

Decile	Percent Change in Income
1	-7.28
2	-7.08
3	-6.82
4	-6.65
5	-6.30
6	-5.87
7	-5.50
8	-5.06
9	-4.88
10	-4.64

Note: Decile 1 corresponds to the poorest income decile while Decile 10 corresponds to the richest income decile.

TABLE 4: IMPACT OF THE FINANCIAL CRISIS ON THE DEMAND FOR FOOD (PERCENTAGE CHANGE)

Commodity	Quintile 1	2	3	4	5
Cereal	-12.7	-10.5	-8.4	-8.4	-9.1
Fruit	-20.5	-25.2	-27.7	-25.2	-25.0
Meat	-20.9	-17.8	-16.9	-16.3	-14.0
Dairy and eggs	-14.5	-19.9	-19.0	-17.5	-15.4
Fish	-18.7	-17.3	19.3	-17.2	-16.6
Beverage	-11.9	-10.9	-10.2	-7.4	-8.2
Others	-13.4	-14.3	-14.2	-13.2	-13.0

Note: Quintile 1 refers to the poorest income quintile while Quintile 5 refers to the richest income quintile.

Assessing the Impact

On income

To estimate the impact of the financial crisis on the incomes of households, actual figures for sectoral gross value added are used in the simulation. Given the difficulty of separately estimating the impact of the financial crisis and the El Niño, the simulations actually show the combined effects of these developments. The results show that the lower income deciles will be experiencing larger percentage declines in income as compared to the higher income deciles (Table 3). Given the decline in incomes especially for the lower income deciles, it is expected that poverty incidence will be higher than the 32.1 percent registered in 1997.

On nutrition

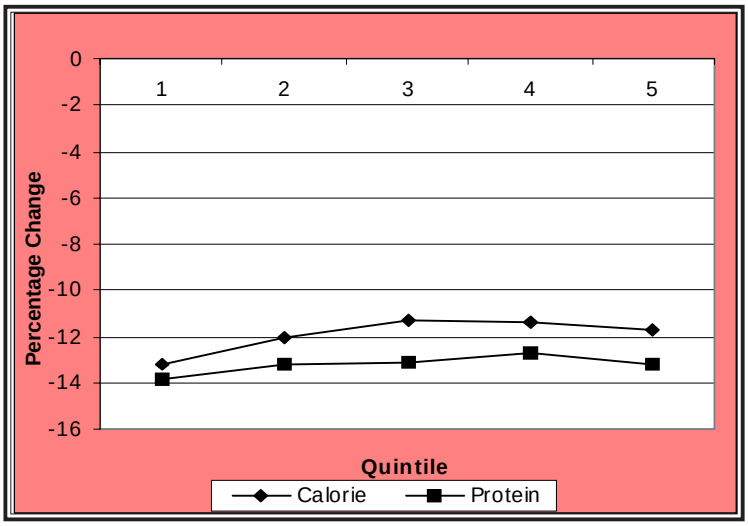
Results indicate that the decline in incomes and increase in prices caused by the policy shock tend to adversely affect the nutritional status of all households as reflected in Table 4 showing the decline in the demand for food among various income groups.

Consequently, the calorie and protein availabilities also decline as gleaned in Figure 1. While all the income quintiles exhibited a decline in this aspect, it should be noted that the *decline for both calorie and protein availability is greatest for the poorest quintile.*

The major source of calorie is cereal, with the proportions varying across income quintiles. For the poorest quintile, cereal accounts for 78 percent of their food intake. With the prices of cereals showing an increase of 3.9 percent in the simulation, it is no wonder that the poorest quintile suffered the largest decline in calorie availability.

Meanwhile, for protein, the major sources are cereal, fish and meat. In the regular meal intake of the poorest quintile, the contribution of cereal, fish, and meat for protein availability are 60 percent,

FIGURE 1: IMPACT OF THE FINANCIAL CRISIS ON NUTRITION OF HOUSEHOLDS (PERCENTAGE CHANGE)



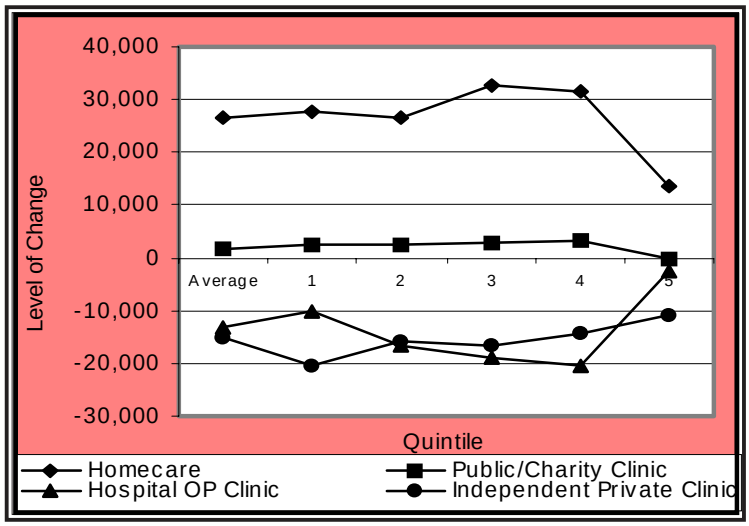


FIGURE 2: IMPACT OF THE RECENT FINANCIAL CRISIS ON THE DEMAND FOR HEALTH CARE FACILITIES, 1998 (BY QUINTILE)

23 percent and 5.6 percent, respectively, while in that of the richest quintile, the shares are 52 percent, 23.5 percent and 11.4 percent. In this simulation, fish and meat prices rose by 8.6 percent and 5.7 percent, respectively.

Given these results, it is likely that the prevalence of malnutrition will increase. Thereupon, it is expected that the 1996 data on the prevalence of underweight among children 0-5 years old of 8.4 percent and among 6-10 years old of 7.4 percent will register an increase. To address this foreseen protein-energy malnutrition, supplementary feeding to be initiated by the government as a temporary and emergency measure may be necessary. Price stabilization for rice will also help address the calorie deficiency.

On access to health care

In terms of health care access, the decline in household incomes and increase in medical care prices are expected to change the demand for different health care facilities for outpatient care. For home care and public/charity clinics, the demand is seen to increase while for independent private clinics and hospitals, it is expected to decline. Figure 2 shows that in 1998, 7.65 million individuals were expected to demand for home care, an increase of 26,479 from the base scenario without the financial crisis. The demand for public/charity clinics, meanwhile, is shown to increase to 1.829 million visits, representing an increase of 1,902 visits. In contrast, the demand for independent private clinic would drop to 3.023 million or a decline of 15,068 visits and that for hospital outpatient clinic would similarly decrease, to 2.122 million or a reduction of 13,313 visits.[1] This same pattern is observed for the bottom 40 percent of the population as gleaned from the same figure.

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[1] *The demand for a specific health care facility is determined by multiplying the number of persons seeking medical care by the probability of using that particular health care facility. The number of persons seeking medical care is estimated to be 20 percent of the total population. The estimated numbers still need to be validated against actual visits. Nevertheless, they provide indications of the relative changes in demand for the different health care facilities.*

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The numbers imply a need for greater resources to be invested in public health care facilities especially as the deterioration in the nutritional status of the population described earlier will make people more vulnerable to diseases and consequently lead to a higher demand for health care.

On enrolment

The hard economic times will prove to be equally detrimental to the education status of certain population segments. While the enrolment data for 1997-1998 do not as yet show the impact of the crisis, it is expected to be manifested in the 1998-1999 enrolment and participation rate figures.

In terms of the simulations done for the MIMAP models, the results show that changes in income and prices brought about by the economic slowdown tend to adversely affect the school attendance of children as noted in Table 5. This finding is consistent with the survey of selected schools in Metro Manila conducted by the Department of Education, Culture and Sports (DECS) which indicates a worrisome trend of a higher number of students dropping out starting in November 1997. Data from the Department of Social Welfare and Development (DSWD) also reveal an increasing number of street children, a possible indication of the impact of the crisis on the school participation of children.

What Needs to be Done: Conclusions and Recommendations

The social impact of the financial crisis, aggravated by the El Niño phenomenon in the Philippines, is now becoming more visible. The adverse effects are expected to continue to manifest themselves more clearly this year. To mitigate these adverse impacts, the government has to ensure that necessary measures are adopted.

One of the more critical responses is to ensure that resource allocation for the social sector is protected *even* and *especially* during times of crisis. In 1997, basic social programs on basic education, primary health care, basic family planning and low-cost water supply and sanitation received 16.4 percent of the national government expenditures. This was slightly higher than the 15.7 percent and 15.8 percent shares in 1995 and 1996, respectively. This has to be maintained and even increased. On the other hand, international donors allocated 14 percent of Official Development Assistance (ODA) to human priority expenditures in 1995, a figure way below the desired 20 percent. Greater advocacy is therefore needed for the government and the international donor community to fulfill the 20:20 commitment.

TABLE 5: IMPACT OF THE FINANCIAL CRISIS ON LEVELS OF SCHOOL ATTENDANCE OF CHILDREN AGES 7 TO 14 (BOTTOM 30 PERCENT)

Decile	Level
1	-16,524
2	-16,100
3	-13,134

It is also imperative that the government implement emergency measures. For instance, targeted supplementary feeding programs in response to decreased availability of food will help stem the rise of malnutrition. Food assistance programs such as the provision of free or subsidized basic food items would also be appropriate. The case of the government intervention in the price of rice through the timely importation of rice is an example of such assistance programs to help abate a possible spiralling of food prices.

Provision of basic health and education services should remain as top priorities of the government. There should be efforts to bring back into the educational system those students who have dropped out. This is to stem whatever long-term adverse impacts there would be on human capital formation.

Finally, the government should continue to be vigilant in terms of addressing the short-term and possible long-run effects of the recent financial crisis on the populace especially the poor. Hopefully, the framework and economic models developed by the MIMAP project can provide the government with the tools of analyzing and anticipating the impact of shocks and macro adjustment policies on the various sectors of society so that it can be better prepared to come up with the appropriate responses. *BEM*

A Look at the Latest Philippine Infant Mortality Data

LAST YEAR, THE NATIONAL STATISTICS Office, in collaboration with the Department of Health, conducted the 1998 Philippine National Demographic and Health Survey (NDHS), a nationally-representative survey covering 13,983 women aged 15-49 years old and designed to provide information on levels and trends of fertility, family planning knowledge and use, infant and child mortality, and maternal and child health.

In terms of information specifically relating to infant mortality in the Philippines, the results of the survey as shown in Table 1 indicate that infant mortality or the number of deaths per 1,000 livebirths in the country declined from 38.4 in 1993 to 36 in 1998. Between urban and rural areas, infant mortality was higher in the latter at 40.2. This 1998 infant mortality rate figure for the rural areas, however, is lower than the one registered in 1993 which stood at 44.3.

Among regions, the National Capital Region (NCR) and Central Visayas (Region 7) registered the lowest infant mortality rates at 23.7 and 23.6, respectively, while Eastern Visayas (Region 8) recorded the highest at 60.8.

Meanwhile, when one looks at certain socioeconomic characteristics of the mothers, the survey results show that the rate of infant mortality was much higher in cases where the mothers had only elementary education or no education at all as compared with cases where the mothers had at least high school or even college education. This supports the findings of previous studies which note that children born to better educated mothers have a higher probability of surviving their early years.

Finally, the NDHS results confirm the importance of mothers having either or both antenatal care and medical assistance at the time of child delivery since the infant mortality rate in said cases was shown to be much lower—at 22.5—vis-à-vis in cases where the mothers had no antenatal or medical care at all (76.8). *RCR*

TABLE 1: INFANT MORTALITY BY SOCIOECONOMIC CHARACTERISTICS, PHILIPPINES, 1998

Socioeconomic Characteristics	*Infant Mortality*
Philippines	36.0
Urban	30.9
Rural	40.2
Region	
NCR	23.7
CAR	42.7
Region 1 Ilocos	41.5
Region 2 Cagayan	37.1
Region 3 C. Luzon	28.7
Region 4 S. Tagalog	35.3
Region 5 Bicol	31.4
Region 6 W. Visayas	26.0
Region 7 C. Visayas	23.6
Region 8 E. Visayas	60.8
Region 9 W. Mindanao	44.6
Region 10 N. Mindanao	41.0
Region 11 S. Mindanao	40.9
Region 12 C. Mindanao	48.4
ARMM	55.1
CARAGA	53.2
Education of Mother	
No education	78.5
Elementary	45.1
High School	31.4
College or higher	23.4
Access to Medical Maternity Care by Mother	
No antenatal/delivery Care	76.8
Either antenatal or delivery	36.5
Both antenatal & delivery	22.5

Source: 1998 National Demographic and Health Survey, National Statistics Office

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Households Models...

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designed by Mr. Rex Robielos of the MIMAP Project team were also a major activity during the training. Mr. Robielos facilitated said hands-on training.

Representatives from other departments of NEDA like the Agriculture Staff (AS), Trade, Industry and Utilities Staff (TIUS), and National Planning and Policy Staff (NPPS) also participated. The workshop was made possible through the cooperation of Ms. Erlinda Capones and Ms. Ria Go-Tian, Director and Senior Economic Development Specialist, respectively, of the SDS-NEDA. *LEV*

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Bulacan Survey...

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The MIMAP Project Monitoring Team composed of Dr. Celia Reyes, Project Director, Dr. Caesar Cororaton, Assistant Project Director, Ms. Anne Bernadette Mandap, Mr. Kenneth Ilarde, Mr. Rex Aurelius Robielos and Ms. Lani Valencia was assisted by officers and staff of the Provincial Planning and Development Office of Bulacan led by Mrs. Dinia Quetua, Project Development Officer, and the Municipal Planning Development Office of Pandi led by Mrs. Ma. Rosario Concepcion, Municipal Planning and Development Coordinator. Community volunteers and leaders from the two barangays likewise actively participated and helped in the survey.

The list of those from the survey sites who rendered their services included Mrs. Miguela Avendaño, the Lingkod Lingap sa Nayon Officer in Barangay Masusô who led the team of mother leaders and community volunteers composed of Mrs.Vilma Jacinto, Mrs. Aida Brigino, Mrs. Adelaida Brigino, Mrs. Tessie Cepeda, Mrs. Theodora Concepcion, Mrs. Francia Brigino, Mrs. Cely Eulin, Ms. Riselda Malubay, Ms. Ruvie Reyes and Mr. Sonny Salvador; and Mrs. Carmen Fabian, the Lingkod Lingap sa Nayon Officer in Barangay Real de Cacarong who led the mother leaders in said barangay composed of Mrs. Eliteria de Guzman, Mrs. Ofelia Abenoja and Mrs. Alma Cañega.

Prior to the actual survey, the MIMAP team conducted a training seminar for all the survey volunteers and assistants at the municipal session hall of Pandi, Bulacan. *KCI*

MIMAP Project Updates-Philippines **is the quarterly newsletter of the MIMAP Project. This work was carried out with the aid of a grant from the International Development Research Centre, Ottawa, Canada.**

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