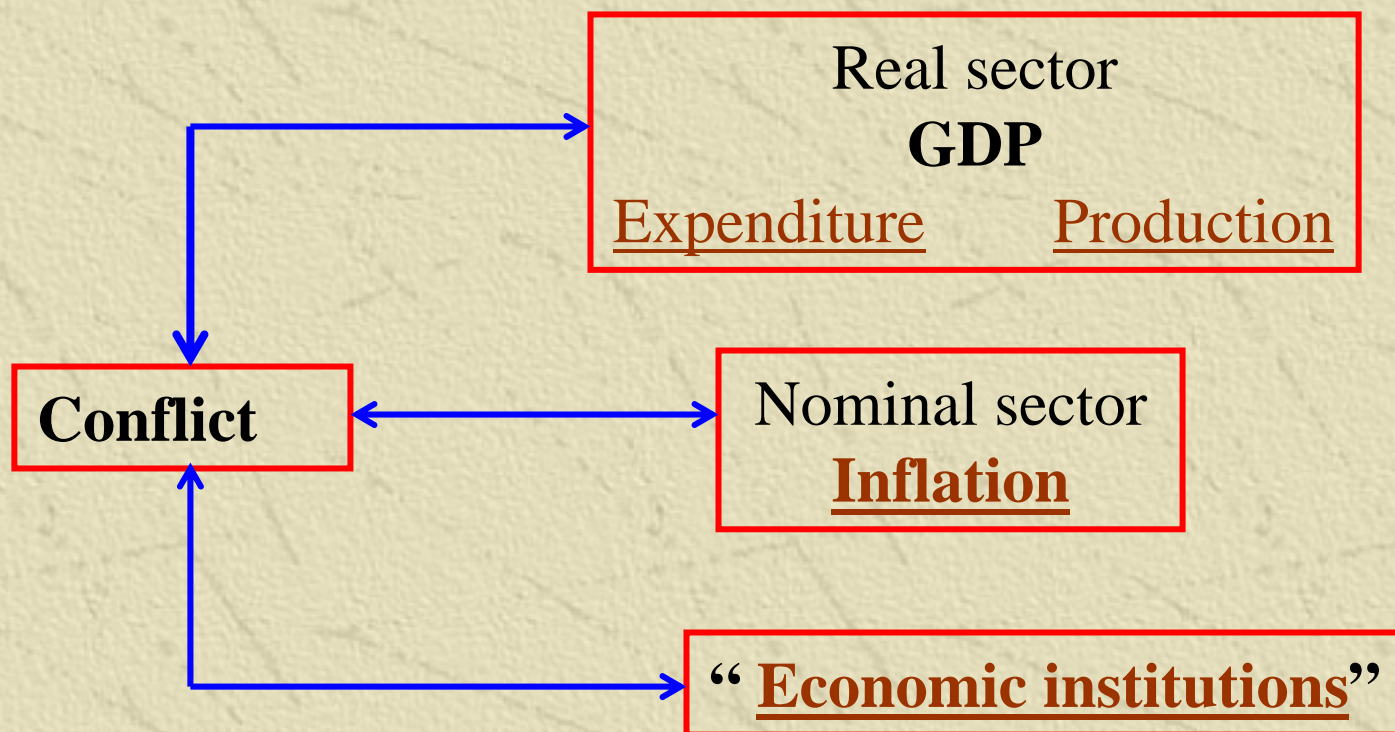


Macroeconomic Effects of Conflict

Mitzirose Legal
Jeff Ducanes

Macroeconomic Effects of Conflict



GDP – Expenditure side

✦ Private Consumption

✦ Investments

✦ Government Consumption

✦ Exports

Lower private consumption

- As private incomes fall due to disruption in economic activities and cessation of businesses due to fighting
- Due to uncertainty in asset values
- As tourism receipts plummet. High incidence of conflict in a country, in particular terrorism, causes tourists to go elsewhere

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Fall in investment

-
- Private investment will be affected by lesser confidence in the future, and increased transaction costs
 - Government investment will fall due to lower revenue and diversion of expenditure to military
 - Local investment is likely to find it difficult to access finance
 - Foreign investors will have greater concern about their personnel as well as greater exchange rate risk

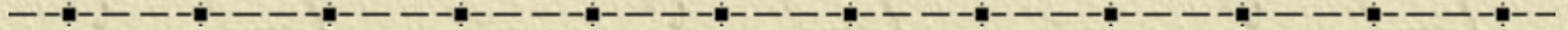
[Back](#)

Government consumption to rise but to result in deficits

- Government consumption to probably rise due to war expenses but budget deficits likely to result as revenues fall as
 - Government finds it more difficult to collect taxes
 - Other major sources of revenue, such as exports, fall away

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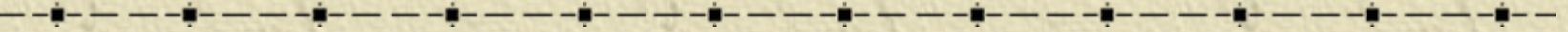
Fall in exports



- Fall in production
- Shift towards domestic markets in an attempt to sustain domestic consumption in the face of falling production
- Disruption in international markets

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GDP – Production side



 Capital

 Labor

Fall in capital

-
- Outright destruction of capital, such as when power plants and telecommunication facilities are sabotaged
 - Decline in investment will eventually lead to lower levels of per capita capital

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Lower quantity and quality of labor

-
- Loss of lives or diminution of health of potential workers
 - Disruption in children's schooling which reduces future level of human capital

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Inflation likely to accelerate

-
- As government resorts to deficit financing
 - As confidence in the currency declines
 - From disruption in production and trade
 - And possibly from speculation by traders

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Adverse effect on “economic institutions”

- Financial development is retarded
 - The demand for domestic currency as medium of exchange and store of value declines
 - Poor quality governance results from conflict, including in the regulation of the financial system
- Reduction in formal and increase in informal sector activity
- Fall in capital-intensive activities and those with significant transportation requirements
- Proportionately less manufacturing and less long-distance trading domestically and internationally

Philippine Case: Barandiaran (2002)

Historical cost of Mindanao conflict

- ✠ Mindanao GDP growth 1 percent lower during war years (1970-1982)
- ✠ Mindanao GDP growth half a percentage point lower during high tension years (1997-2002)
- ✠ Philippine GDP growth a fifth of a percentage point lower (1997-2002)

Philippine Case: Barandiaran (2002)

Cost of Mindanao conflict to economy for next 10 yrs

- ✦ \$2 billion for the whole Philippines from 1970-2001
- ✦ Per capita GDP in southern Mindanao will be 10% lower than it could be in the 10th year

Philippine Case: Barandiaran (2002)

Relative to estimated cost of conflict to other countries, low for the Philippines because

- ✦ Conflict contained within the small area of Southwestern Mindanao
- ✦ The resource base of Southwestern Mindanao at the beginning of the conflict had low economic value

Philippine Case: World Bank (2005)

Adding the indirect economic impact of the conflict such as on investment deflection and agricultural productivity could raise the overall economic cost of the Mindanao conflict to well over **\$10 billion** from 1975-2002.

Human and Social Costs of Conflict

Deaths and Injuries

- ✠ Estimated 120,000 deaths since the 1970s (World Bank 2005)
 - ◆ Of these an estimated 30% are government casualties, 50% are rebels, and 20% are civilians (Arguilals 2003)
- ✠ From 1970-1996 the reported injured, not counting those among the rebels, was 55,000 (Arguilals 2003)

Human and Social Costs of Conflict

Displacement

- ✦ More than 2 million people displaced since the 1970s – half of these during President Estrada’s all out war in 2000 (World Bank 2005)
 - ✦ The US Committee for Refugees identifies the Philippines as one of the top countries in the world where mass exodus of people are pervasive. In Southeast Asia it ranks 3rd, next only to Burma and Indonesia.
- ✦ Even if displacement is sometimes temporary, it can have huge effects
 - ✦ A survey of more than 1200 evacuees conducted in 2003 by Notre Dame University and the Population Commission in select evacuation centers in Mindanao revealed about 12% got sick during displacement. Moreover, among them, 18% of in-school children stopped schooling because of the evacuation

Human and Social Costs of Conflict

Displacement

- ◆ Emergence of Muslim ghettos in Mindanao and other places in the country (World Bank 2005)
- ◆ Exodus to neighboring countries such as in Sabah Malaysia, the periodic crackdown against which causes economic and social problems to their places of origin (World Bank 2005)

Stylized Facts

- ✦ **PHDR 2002:** At every aspect of human development, always among the laggards are provinces in Muslim Mindanao where conflict has been of long standing.
- ✦ **Monsod et al. paper on MDG, Ho (WorldBank) paper on ARMM and human development:** Same provinces are among least likely to attain millenium development goals.
- ✦ To a lesser extent, some CAR provinces also fare poorly wrt to several development and poverty measures

PHDR 2002

Table 2.1: Life Expectancy
(in years, 2000)

| Top ten | Years | Bottom ten | Years |
|---------------|-------|---------------|-------|
| Cebu | 71.8 | Ifugao | 61.9 |
| Pampanga | 71.4 | Kalinga | 61.8 |
| Batangas | 71.0 | Apayao | 61.6 |
| Bulacan | 70.7 | E. Samar | 61.1 |
| Rizal | 70.2 | W. Samar | 60.6 |
| Nueva Ecija | 70.2 | Basilan | 60.2 |
| Camarines Sur | 69.9 | Lanao del Sur | 56.9 |
| Davao del Sur | 69.9 | Maguindanao | 52.6 |
| La Union | 69.8 | Sulu | 52.3 |
| Cavite | 69.7 | Tawi-Tawi | 50.8 |

Source: Statistical Annex 1

PHDR 2002

Table 2.2: High-school graduate ratio (18 and above)
2000

| Top ten | % | Bottom ten | % |
|------------------|------|----------------|------|
| Rizal | 66.9 | Bohol | 33.1 |
| Benguet | 64.7 | Biliran | 32.6 |
| Cavite | 64.3 | Davao Oriental | 31.8 |
| Bataan | 62.2 | Northern Samar | 31.8 |
| Laguna | 60.8 | Apayao | 31.3 |
| Batanes | 60.7 | Basilan | 28.6 |
| Zambales | 60.2 | Eastern Samar | 27.8 |
| Pangasinan | 60.0 | Masbate | 23.3 |
| Misamis Oriental | 55.2 | Western Samar | 22.3 |
| Ilocos Norte | 54.9 | Sulu | 18.1 |

Source: Statistical Annex 1

PHDR 2002

Table 2.3: % Basic Enrollment Rate
(7-16 years old)
1999

| Top ten | % | Bottom ten | % |
|--------------|------|----------------------|-------------|
| Batanes | 98.0 | Davao del Sur | 85.3 |
| Mt. Province | 95.7 | Camarines Sur | 84.5 |
| Cavite | 95.6 | Masbate | 84.0 |
| Catanduanes | 95.3 | Bukidnon | 82.8 |
| Siquijor | 95.2 | Basilan | 82.1 |
| Camiguin | 94.9 | Negros Oriental | 79.7 |
| Ilocos Norte | 94.9 | Sulu | 77.7 |
| Antique | 94.8 | Lanao del Sur | 76.9 |
| Zambales | 94.8 | Maguindanao | 76.6 |
| Benguet | 94.8 | Sarangani | 69.3 |

Source: Statistical Annex 1

PHDR 2002

Table 2.5: Real Per Capita Income
(NCR 1997 Pesos)
2000

| Top ten | Pesos | Bottom ten | Pesos |
|-------------------|--------|---------------|--------|
| Rizal | 39,895 | Western Samar | 17,262 |
| Ilocos Norte | 36,460 | Marinduque | 16,973 |
| Laguna | 34,717 | Lanao del Sur | 15,936 |
| Bataan | 33,907 | Romblon | 15,679 |
| Bulacan | 32,318 | Sorsogon | 15,637 |
| Southern Cotabato | 32,101 | Eastern Samar | 15,253 |
| Benguet | 31,968 | Basilan | 13,193 |
| Cavite | 31,814 | Masbate | 12,825 |
| Misamis Oriental | 31,795 | Tawi-Tawi | 11,349 |
| Nueva Vizcaya | 31,515 | Sulu | 7,850 |

Source: Statistical Annex 1

PHDR 2002

Table 2.7: Top and Bottom 10 provinces in HDI
2000

| 1997 Rank ^a | Top provinces | HDI 2000 | 1997 Rank ^b | Bottom provinces | HDI 2000 |
|------------------------|---------------|----------|------------------------|------------------|----------|
| 1 | Rizal | 0.758 | 11 | Romblon | 0.488 |
| 7 | Ilocos Norte | 0.708 | 8 | Sarangani | 0.480 |
| 4 | Bataan | 0.698 | 3 | E. Samar | 0.452 |
| 5 | Cavite | 0.693 | 7 | W. Samar | 0.448 |
| 6 | Laguna | 0.690 | 4 | Masbate | 0.433 |
| 8 | Benguet | 0.688 | 6 | Maguindanao | 0.431 |
| 12 | Bulacan | 0.672 | 5 | Lanao del Sur | 0.425 |
| 2 | Mis. Orient. | 0.665 | 10 | Basilan | 0.420 |
| 18 | Iloilo | 0.653 | 2 | Tawi-Tawi | 0.378 |
| 9 | Pampanga | 0.652 | 1 | Sulu | 0.311 |

^aNumber of places from top, e.g., 1=top; ^bNumber of places from bottom, e.g., 1=last

Source: Statistical Annex 1

PHDR 2002

Table 2.14: Top and Bottom Provinces in Poverty Incidence
2000

| HDI Rank from Top | Province | Incidence | HDI Rank from Bottom | Province | Incidence |
|-------------------|---------------|-----------|----------------------|------------------|-------------|
| 2 | Ilocos Norte | 6.2 | 25 | Siquijor | 51.1 |
| 3 | Bataan | 7.6 | 7 | Western Samar | 51.3 |
| 5 | Laguna | 7.7 | 24 | Z. del Norte | 51.9 |
| 10 | Pampanga | 8.7 | 15 | Sorsogon | 52.9 |
| 15 | Nueva Vizcaya | 9.3 | 8 | Eastern Samar | 61.7 |
| 7 | Bulacan | 9.5 | 3 | Basilan | 63.0 |
| 11 | Batanes | 9.9 | 5 | Masbate | 70.8 |
| 38 | Apayao | 10.4 | 10 | Romblon | 74.4 |
| 1 | Rizal | 10.5 | 2 | Tawi-Tawi | 75.3 |
| 4 | Cavite | 10.9 | 1 | Sulu | 92.0 |

Source: Statistical Annex 4

PHDR 2002

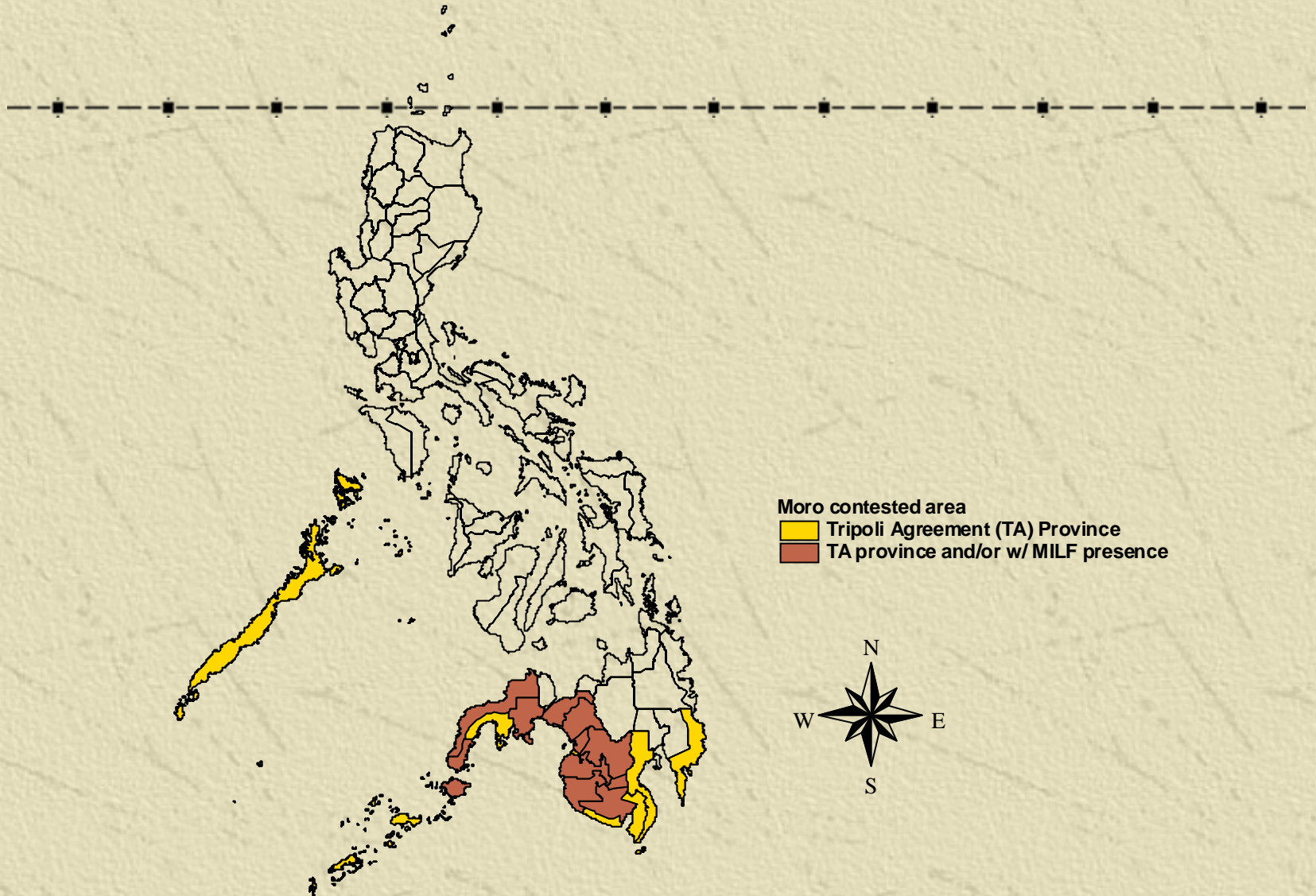
Table 2.15: Top and Bottom Provinces in HPI (1994-2000)

| Top provinces | HPI | Bottom provinces* | HPI |
|------------------|------|---------------------|------|
| Cavite | 8.8 | Capiz | 24.4 |
| Nueva Ecija | 8.9 | Zamboanga del Norte | 24.7 |
| Bulacan | 9.0 | Guimaras | 24.8 |
| Batangas | 9.2 | Apayao | 26.4 |
| Bataan | 10.3 | Maguindanao | 29.4 |
| Pangasinan | 11.5 | Masbate | 29.9 |
| Isabela | 11.5 | Ifugao | 35.8 |
| Laguna | 11.6 | Lanao del Sur | 35.9 |
| Oriental Mindoro | 11.8 | Sulu | 37.8 |
| Marinduque | 12.2 | Tawi-Tawi | 42.4 |

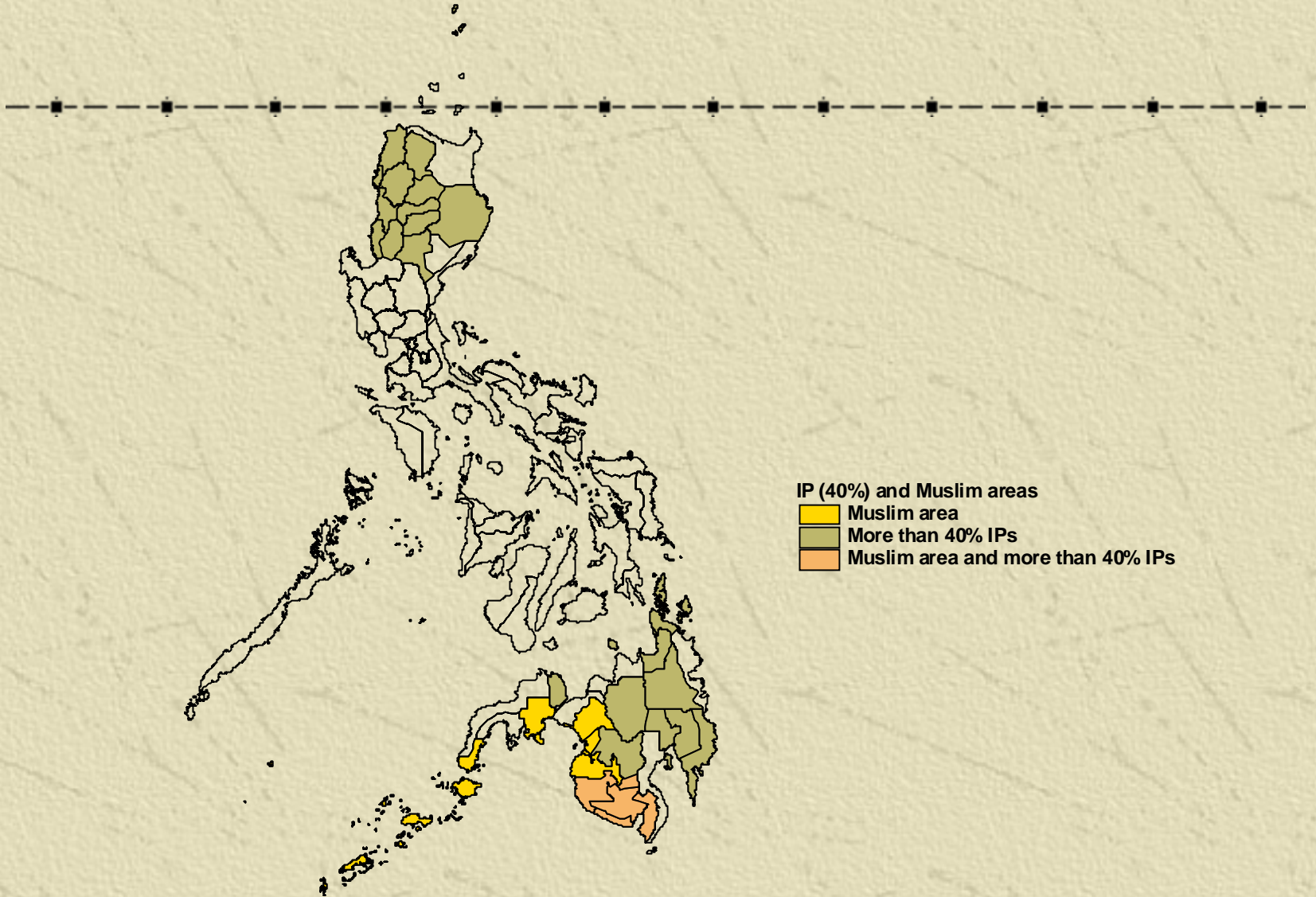
*Data on the percentage of underweight children is unavailable for Basilan so the HPI was not computed for this province. But were it available, Basilan is likely to be among the bottom ten in HPI.

Source: Statistical Annex 5

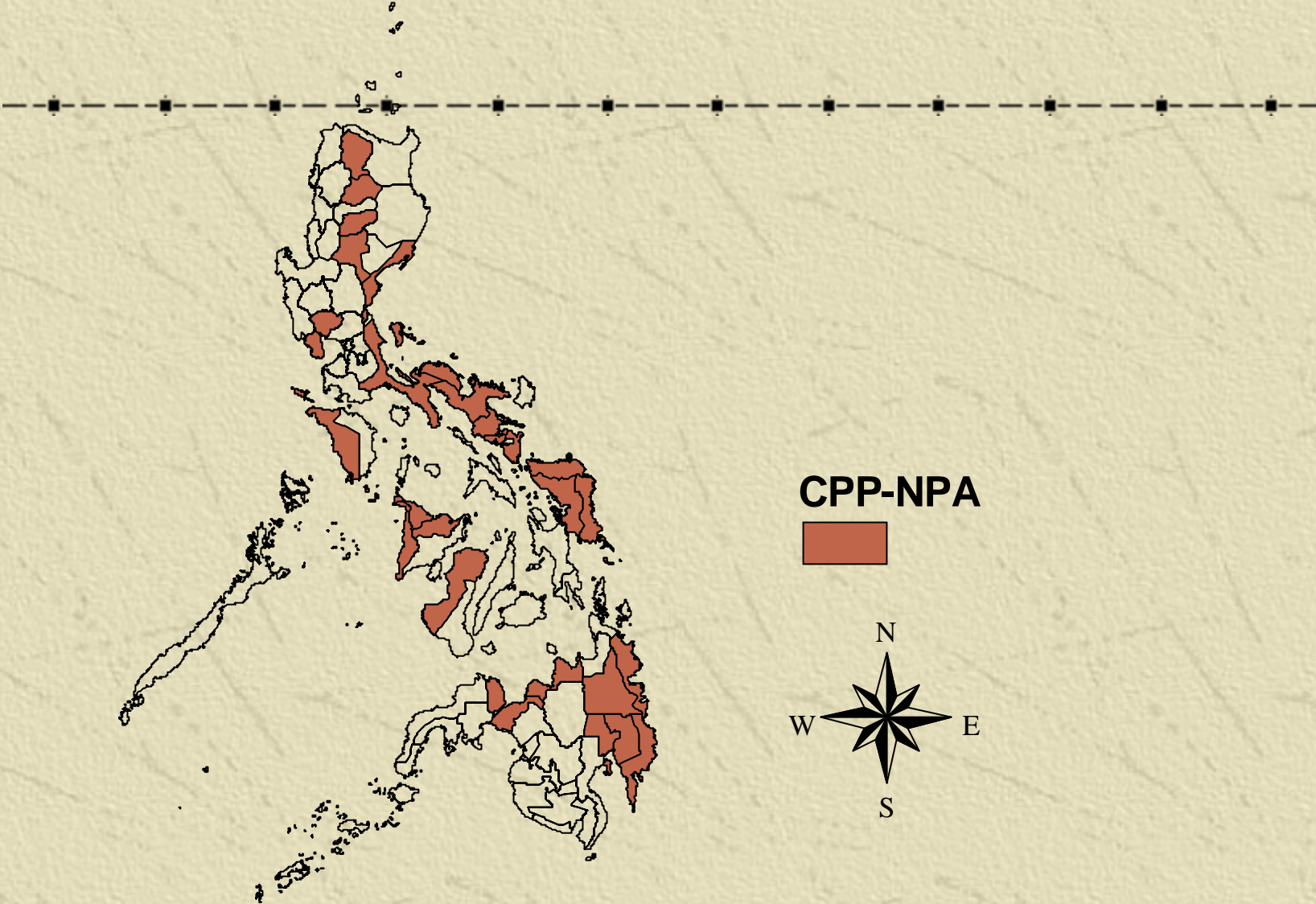
Moro Contested Areas



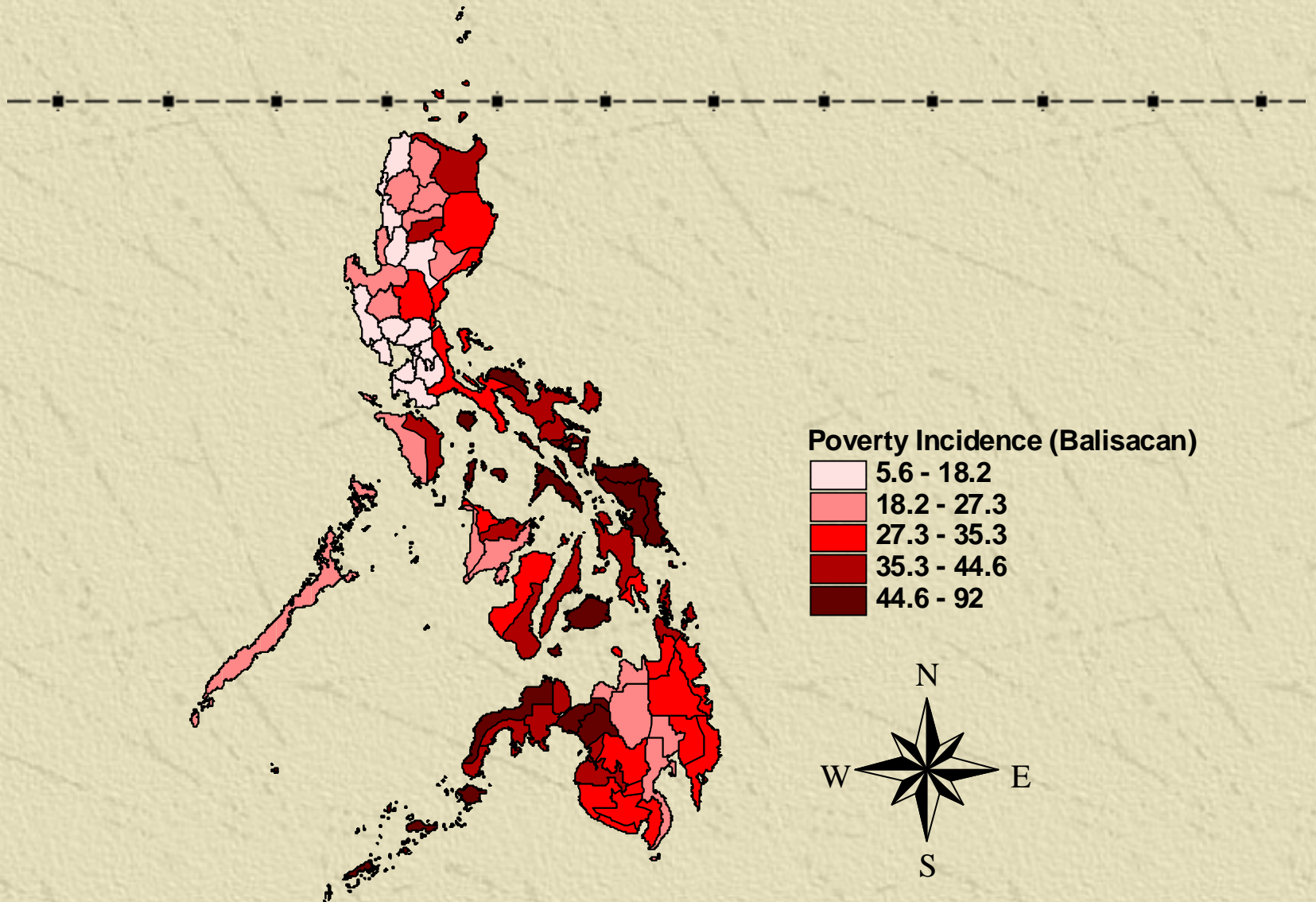
Indigenous People and Muslim Areas



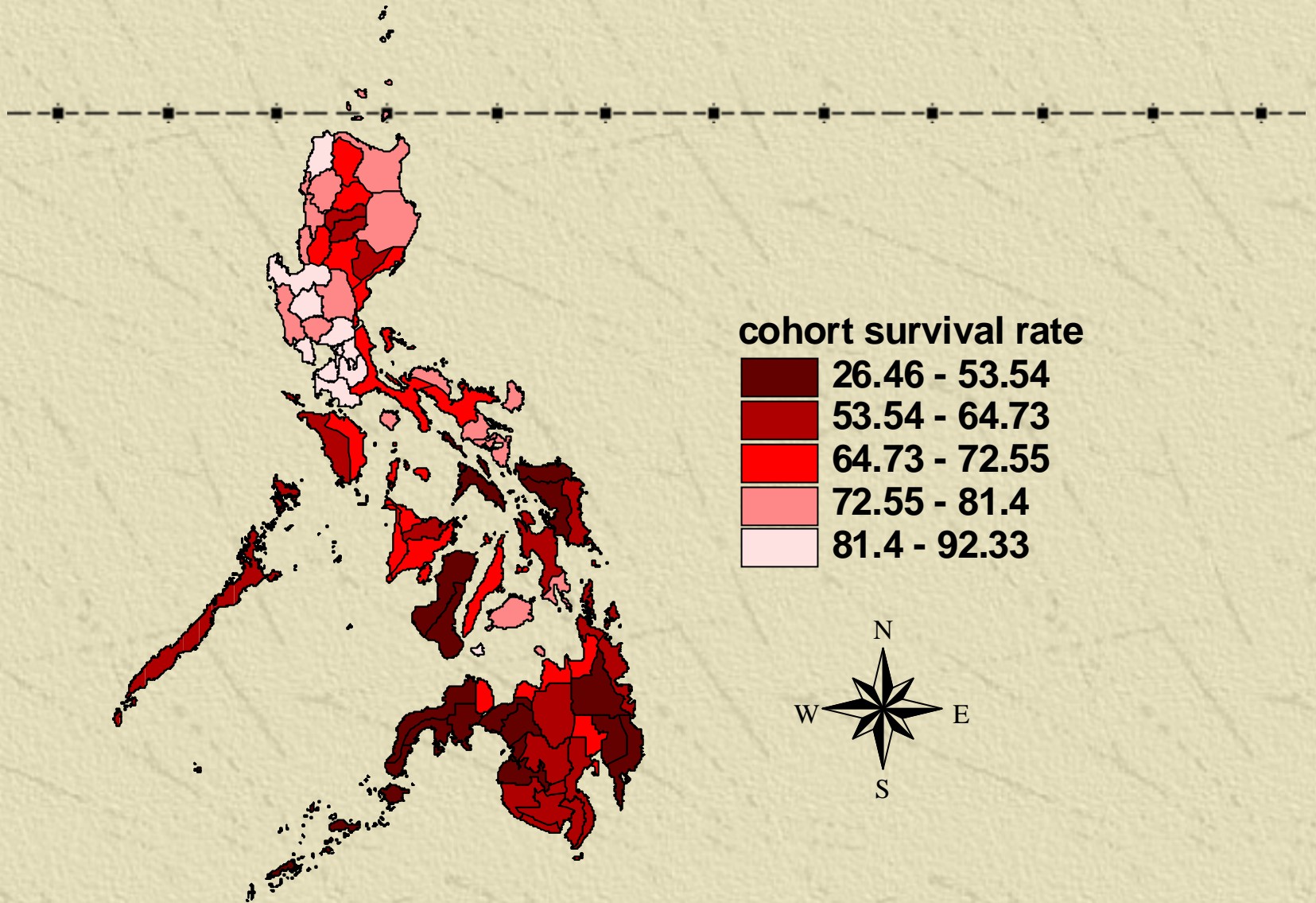
CPP-NPA Affected Areas



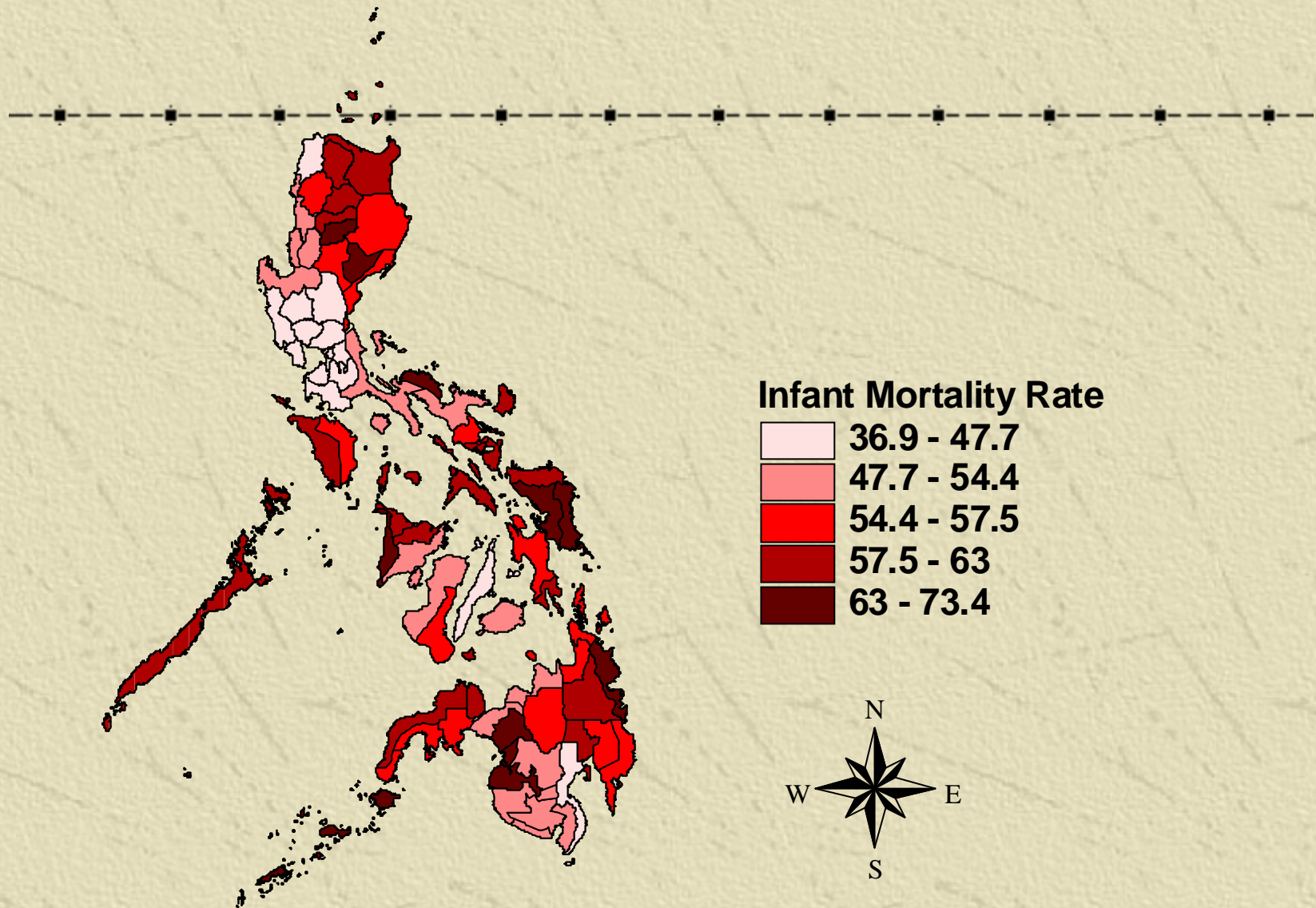
Poverty Incidence (Balisacan)



Cohort Survival Rate



Infant Mortality Rate



Robust relationship

- ✦ Negative relationship between various development measures and Muslim Mindanao quite robust
- ✦ Even if you control for geographic variables (*climate, topography, etc.*) and access and infrastructure variables (*road density, presence of port, etc.*) and even initial conditions (proxied by *poverty incidence in 1990*), a dummy variable for Muslim Mindanao provinces still has strong explanatory power (Monsod et al.)

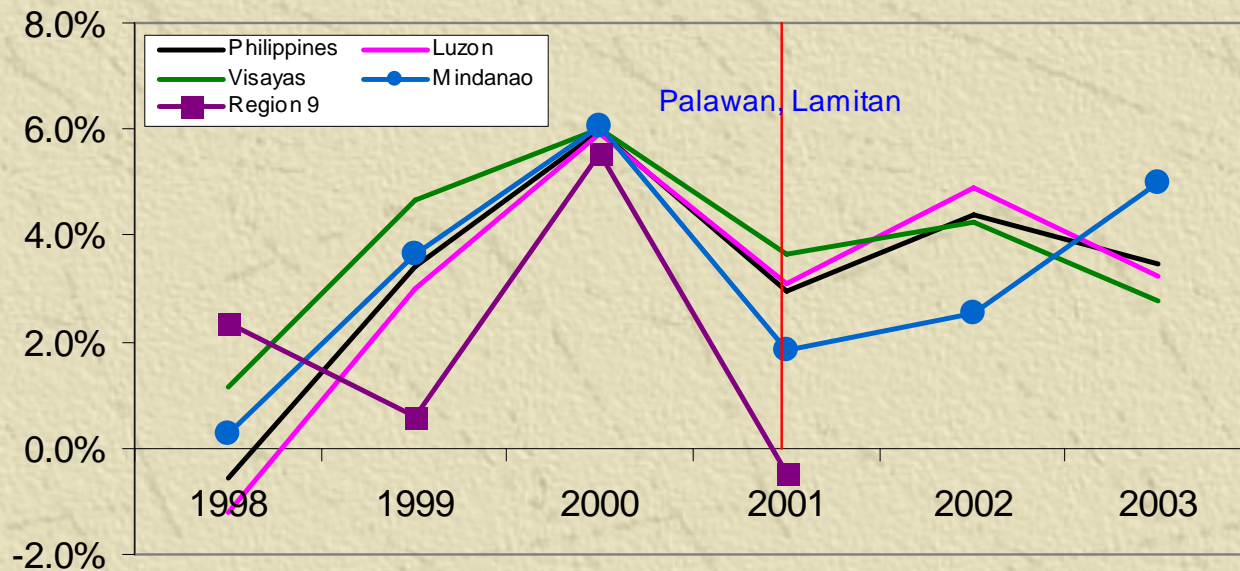
Robust relationship

Controlling for all these other variables, on average,
in Muslim Mindanao

- *poverty incidence* is 32 percentage points higher
- *per capita income* P11,000 lower (2000 value)
- *cohort survival rate* 31 percentage points lower
- *infant mortality rate* 15 points higher

Cost of Conflict Escalation

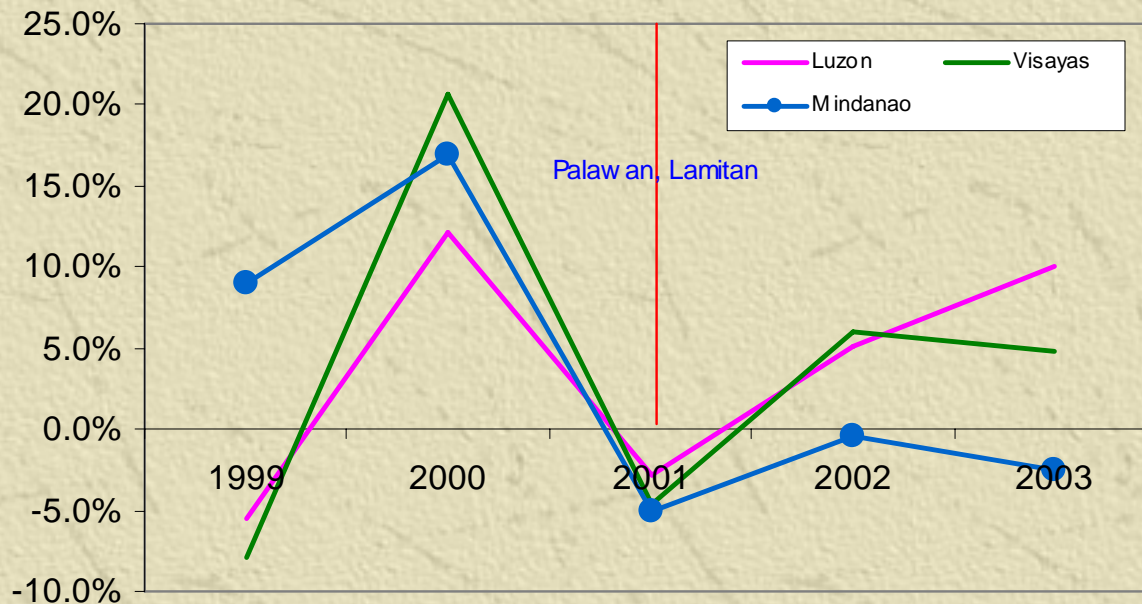
Fig 1. GDP Growth



The monetary equivalent of the fall in Mindanao's GDP growth is about P7 billion.

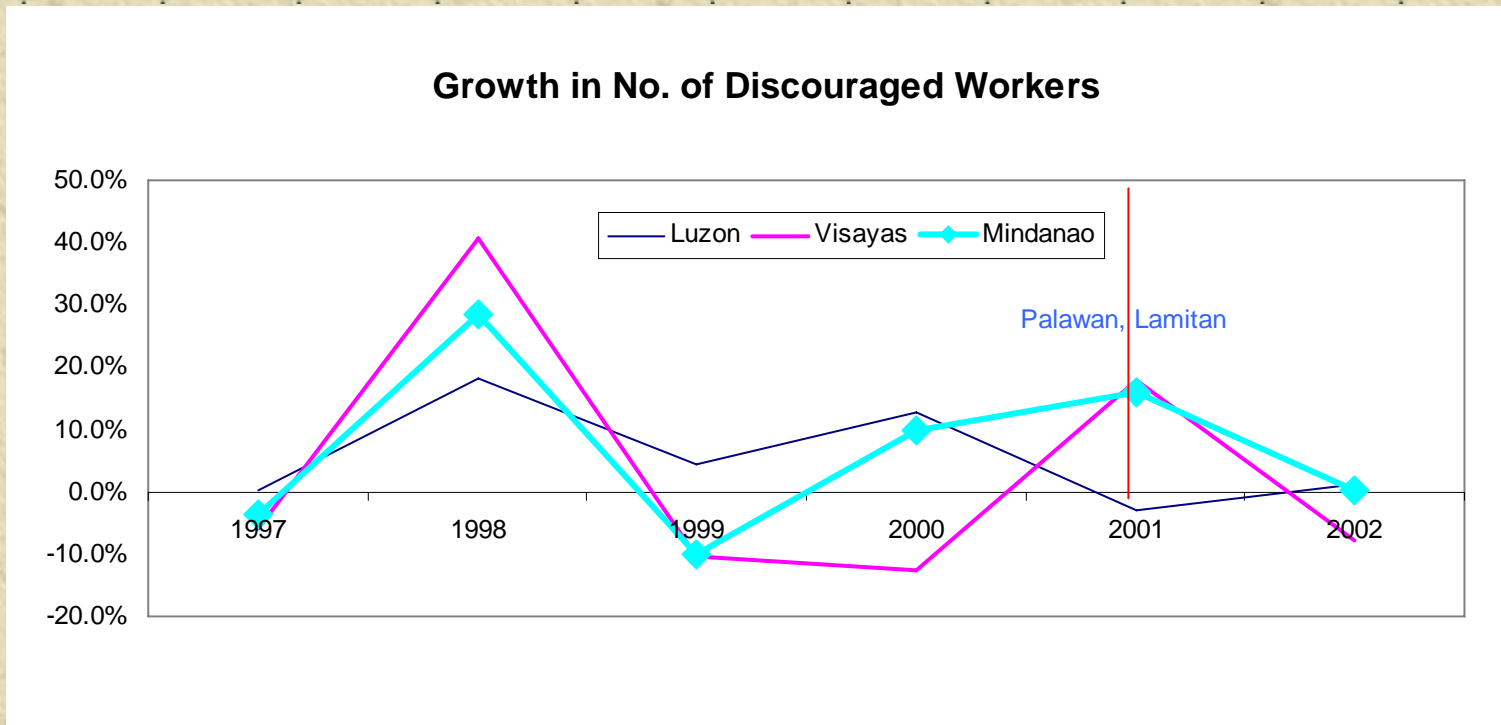
Cost of Conflict Escalation

Investments Growth (Durable Equipment)



Investments fell after Palawan/Lamitan and has yet to recover.

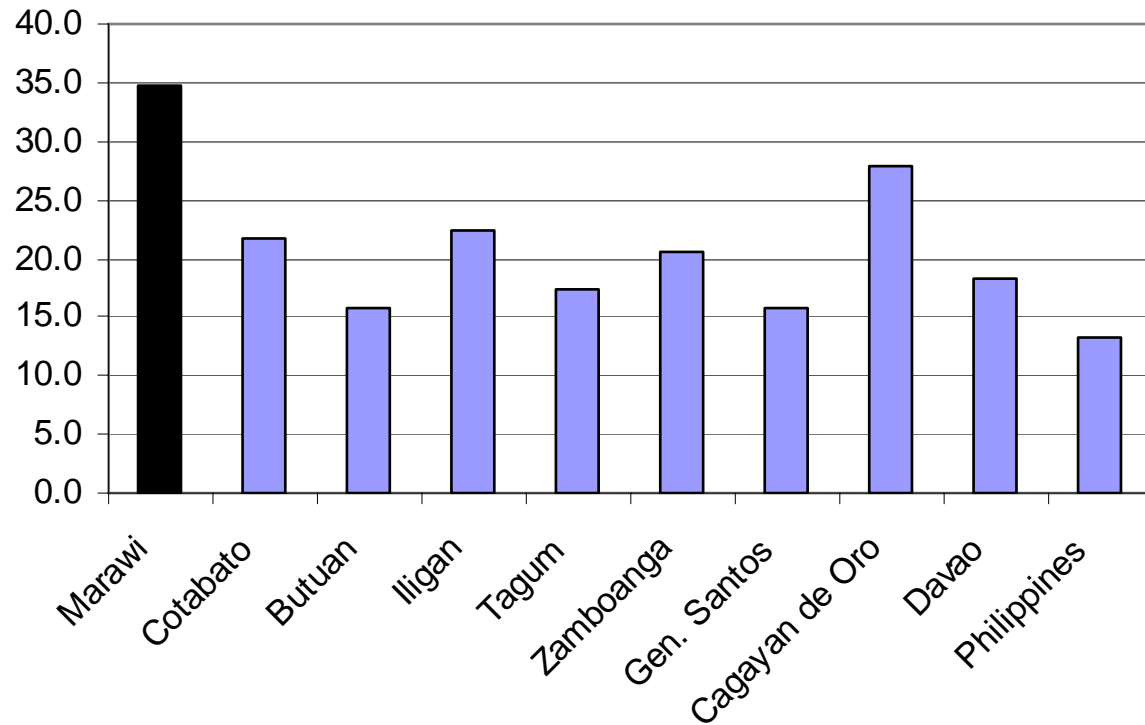
Cost of Conflict Escalation



The no. of discouraged workers hit a historical high in Mindanao 2001.

Illustrative Case: Marawi

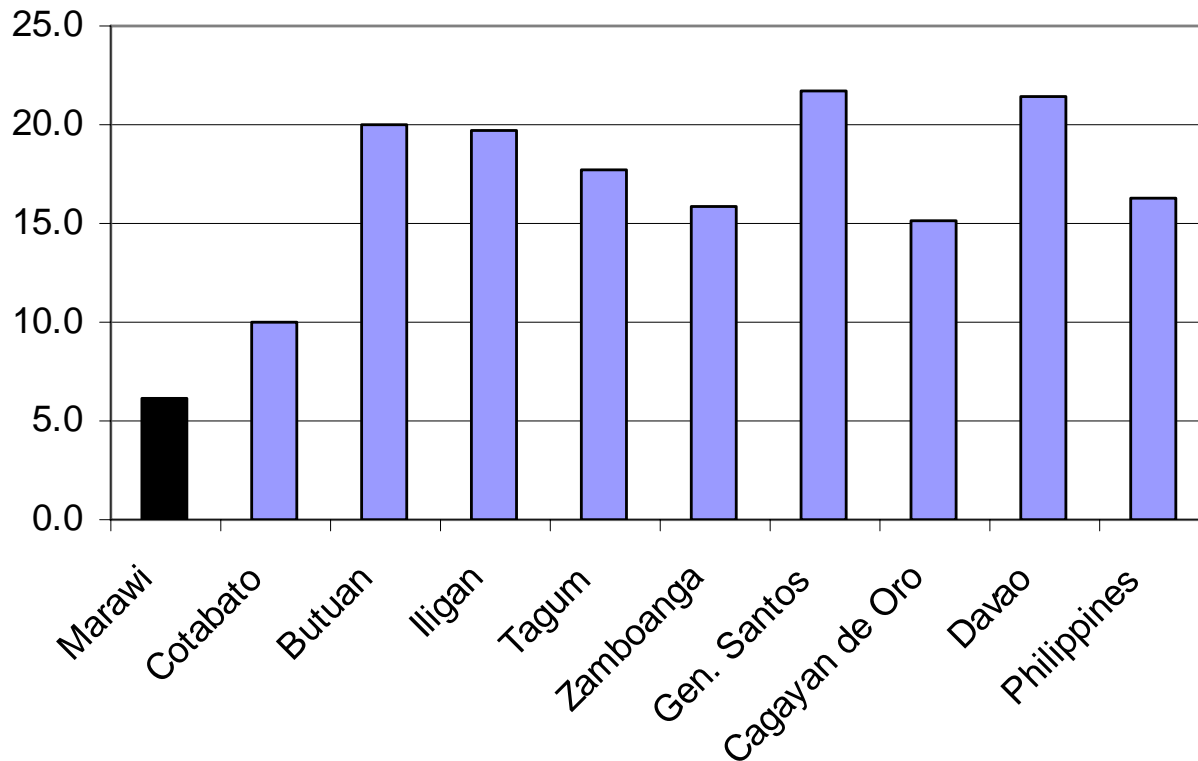
Figure 1. % of Population 25 yrs and Over that Finished College



Source: APIS 2002

Illustrative Case: Marawi

Figure 2. % of Workers in Industry



Source: APIS 2002

Illustrative Case: Marawi

Table 1. # of Manufacturing Enterprises and Financial Establishment in Mindanao Cities

| City | Mfg Enterprises | Banks and Pawnshops |
|----------------|-----------------|---------------------|
| Marawi | 80 | 9 |
| Cotabato | 114 | 35 |
| Butuan | 316 | 81 |
| Iligan | 100 | 41 |
| Zamboanga | 224 | 65 |
| Gen. Santos | 141 | 57 |
| Cagayan de Oro | 271 | 169 |
| Davao | 740 | 252 |

Source: 2000 Census

Illustrative Case: Marawi

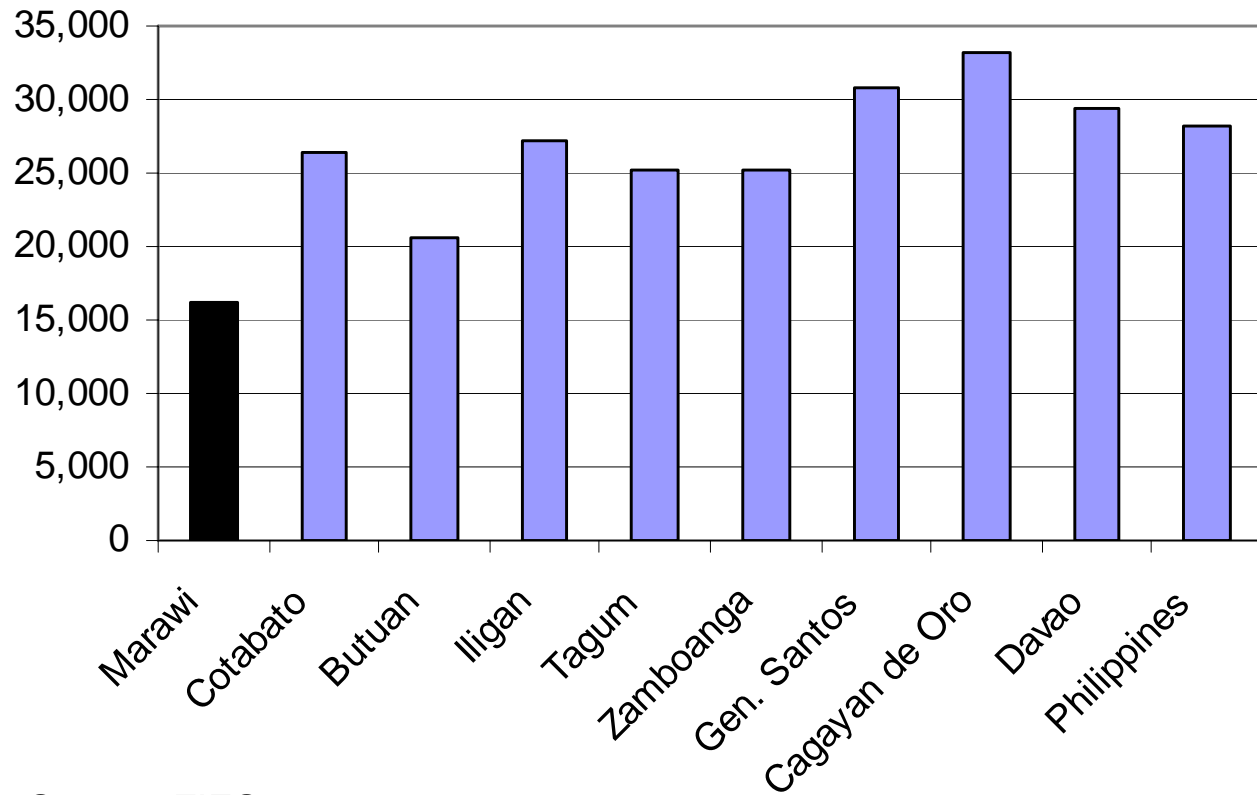
Table 2. Tax and Non-tax Revenues, 2000 (Million Pesos)

| City | Total Revenues (including non-tax) | Real Property Tax | Business Tax |
|----------------|------------------------------------|-------------------|--------------|
| Marawi | 4.987 | 0.673 | 1.258 |
| Cotabato | 91.323 | 10.119 | 21.704 |
| Butuan | 159.902 | 23.980 | 46.830 |
| Iligan | 220.836 | 73.119 | 69.733 |
| Tagum | 175.681 | 33.386 | 34.348 |
| Zamboanga | 435.452 | 40.815 | 92.763 |
| General Santos | 332.900 | 61.390 | 75.576 |
| Cagayan de Oro | 320.653 | 68.883 | 160.054 |
| Davao | 1026.140 | 218.253 | 314.413 |

Source:

Illustrative Case: Marawi

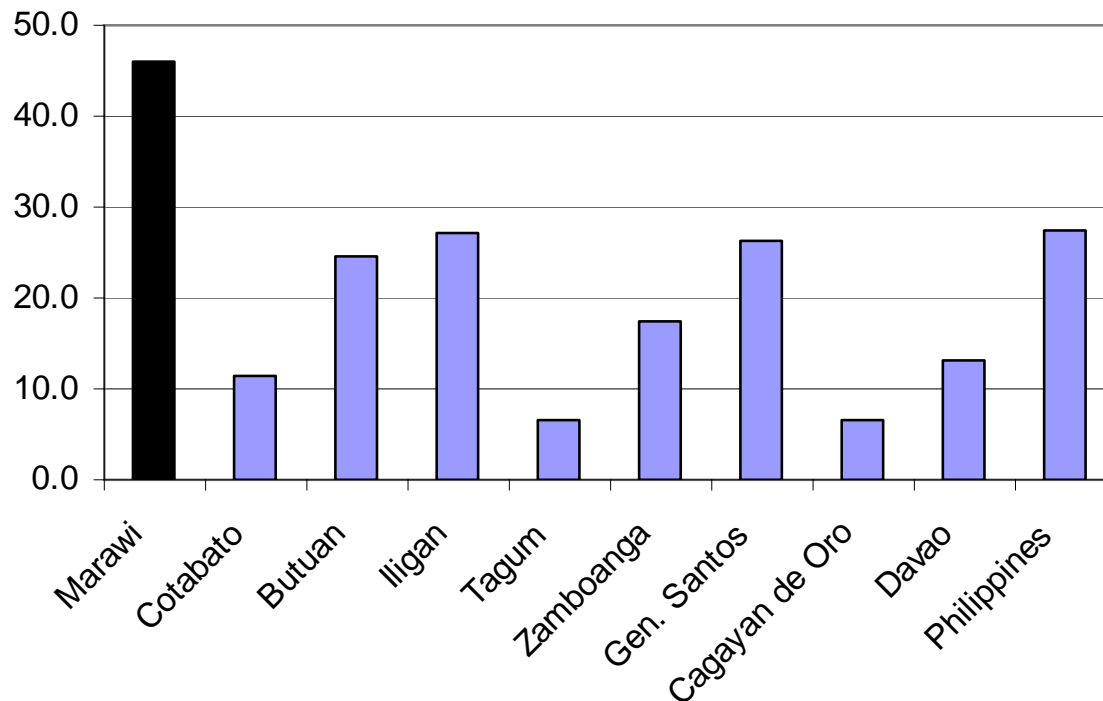
Figure 3. Per Capita Income, 2000



Source: FIES

Illustrative Case: Marawi

Figure 4. Poverty Incidence, 2000*



Source: FIES 2000

* Uses Balisacan's consistent cost-of-living poverty lines