

# Intermediate Macroeconomic Theory

Costas Azariadis

Lecture 2: The meaning of  
economic aggregates

# Economic Aggregates

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Macroeconomic  
Theory

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The meaning of economic aggregates

a) The informational content of national income accounts

Daily/hourly info about

→ stocks, bonds, yields, exchange rates

Monthly info about

→ CPI, unemployment rate

Quarterly info about

→ GDP growth

Some stocks up, others down

Some prices stable, others volatile

Some industries expanding (high tech, import, export), others shrink (autos, real estate)

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**Q: How can we summarize a complex economy  
with a few statistics?**

Incomes: GDP, GNP, Disp. Income

Prices: CPI, GDP Deflator, exchange rates

Stocks: Dow-Jones (30 stocks); S&P 500 (500  
stocks); Russell(2K, 3K, 5K)

Private financial wealth: Value of all traded stocks +  
housing + federal debt + currency

Human wealth: Discounted value of all earnings

U.S. financial wealth  $\approx$  3 years worth of GDP  $\approx$  \$45  
trillion

U.S. human wealth  $\approx$  twice as high as financial  
wealth

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b) Measuring economic activity:

National income accounting

Three measures of aggregate income:

- Current output = value of final goods sold = sum of values added at each intermediate stage of production
- Sum of incomes received by all people involved in production
- Total spending on final goods

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Table 1: Expenditure Approach to Measuring GDP in the United States, 2008

	Billions of Dollars	Percent GDP
Personal Consumption (C) equals	10,130	70.1
Consumer Durables +	1,095	7.6
Nondurable Goods +	2,308	16.0
Services	6,727	46.6
Gross Private Domestic Investment (I) equals	2,136	14.8
Business fixed investment +	1,694	11.7
Residential Investment +	477	3.3
Inventory Investment	-35	-0.2

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Table 2: Expenditure Approach to Measuring GDP in the United States, 2008

		Billions of Dollars	Percent GDP
Government Purchases of goods and services (G) equals		2,883	20.0
Federal +		1,083	7.5
	National Defense	738	(5.1)
	Nondefense	345	(2.4)
State and local +		1801	12.5
Net Exports (NX) equals		-708	-4.9
	Exports	1,831	(12.7)
	minus Imports	2,539	(17.6)
Total (equals GDP)	$Y=C+I+G+NX$	14,441	100.0

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Table 3: Income Approach to Measuring GDP in the United States, 2008

	Billions of Dollars	Percent GDP	
Compensation of Employees	8,037	55.7	
Proprietor's Income	1,106	7.7	} Capital income = 24.2
Rental income of persons	210	1.5	
Corporate Profits	1,360	9.4	
Net Interest	815	5.6	
Taxes on Production and imports	994	6.9	
Business Current transfer payments	119	0.8	
Current Surplus of government enterprises	-7	0.0	
Total (equals National Income) (NI)	12,635	87.5	

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Table 4: Income Approach to Measuring GDP in the United States, 2008

	Billions of Dollars	Percent GDP
Total (equals National Income) (NI)	12,635	87.5
Plus statistical discrepancy	101	0.7
Equals Net National Product (NNP)	12,736	88.2
Plus Consumption of fixed capital	1,847	12.8
Equals Gross National Product (GNP)	14,583	101.0
Less Factor income received from rest of world	809	5.6
Plus Payments of factor income to rest of world	667	4.6
Equals Gross Domestic Product	14,441	100.0



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## c) Income v. Welfare

Being “rich” v. being “happy”

Quality of life: leisure, amenities, housing

Example: pollution in Beijing, space shortage in Japan, music in Vienna, noise in Rome, weather in San Diego

## d) Measuring Real and Nominal Income

Nominal income = monetary value of income (= \$ receipts)

Real income = purchasing power of income e.g.

\$40,000 per year is a decent salary in St. Louis, a low salary in NYC or LA

Q: How do we measure what money buys?

A: Need price index: GDP deflator or CPI or PCE (Personal Consumption Expenditure) index

$$\text{GDP Deflator} = 100 * \frac{\text{nominal } GDP}{\text{real } GDP}$$

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A numerical example:

Tables  $\left\{ \begin{smallmatrix} 2.2 \\ 2.3 \end{smallmatrix} \right\}$  pp. 42, 43

Chain-weighting GDP

Take geometric average to remove impact of choosing base year

Percentage growth in GDP = 34.8% if base year is 1  
29.4% if base year is 2

Geometric Average:  $\sqrt{34.6 * 29.4} = 32.1\%$

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## e) CPI and Inflation

Measure retail prices of consumer goods & services in urban areas in particular  
cost of basket of goods and services consumed by "average" urban household

If  $P_{t+1}$  is the cost of the basket at  $t+1$ , the inflation at  $t+1$  is :

$$\Pi_{t+1} = \frac{P_{t+1} - P_t}{P_t}$$

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## Limitations of the CPI

- quality adjustment bias → price increases because of higher quality (more money & faster operating systems in computers / phones)
- substitution bias → CPI prices fixed basket but actual households move away from expensive goods when relative prices change.

(e.g., gas consumption now)

- income bias → rich & poor do not consume the same basket of goods & do not face the same rate of inflation.
- CPI vs. PCE index  
Fed uses PCE. PCE based on actual household expenditure; avoids substitution bias of CPI

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f) World Poverty (From The Economist, 08/30/2008, p. 70)  
World Bank Questions: What is real poverty? Where are the poor? How many of them are there?

Def. Poverty defined as living on less than what \$ 1.25 per day bought in the U.S.A. in 2005.

Q: Do we use foreign CPI and market exchange rates? Not if poor consume differently from rich.

Asian Development Bank finds that:

In 16 member countries, poor pay lower prices than others

→ buying cheaper goods

→ using unofficial (itinerant) retailers

e.g., Indonesian poor pay 21% less than CPI.

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Table 5: People (in millions) living on less than \$1.25 per day

East Asia & Pacific (of which China=208)	337
South Asia (of which India=455)	595
Sub-Sahara Africa	385
Others	83
Total	1,400

$\approx 22\%$  of world's population

Therefore, China and India have most of the world's poor

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## Notes on Poverty

- For U.S. income distribution data, go to Wikipedia: “Income Distribution in the United States”
- Ratio of income of the 20% richest/20% poorest in the U.S. was 5.8 in 1960, 7.1 in 2005.
- Most income inequality in world is between countries, less is within each country.
- Per capita income in 10 richest nations=77 times per capita income in poor nations.

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## Gross national income per capita 2008, Atlas method and PPP

Ranking	Economy	Atlas methodology (US dollars)	Ranking	Economy	Purchasing power parity (international dollars)
1	Liechtenstein	.. a	2	Luxembourg	64,320
2	Bermuda	.. a	4	Norway	58,500
3	Norway	87,070	5	Kuwait	52,610 a
4	Luxembourg	84,890	7	Macao, China	52,260 a
5	Channel Islands	68,640 a	9	Brunei Darussalam	50,200 a
6	Switzerland	65,330	10	Singapore	47,940
7	Denmark	59,130	11	United States	46,970
8	Qatar	.. a	12	Switzerland	46,460
9	Sweden	50,940	16	Hong Kong, China	43,960
10	Netherlands	50,150	18	Netherlands	41,670
11	Ireland	49,590	22	Sweden	38,180
12	San Marino	46,770 a	23	Austria	37,680
13	Finland	48,120	24	Ireland	37,350
14	United States	47,580	25	Denmark	37,280
15	Cayman Islands	.. a	27	Canada	36,220
16	Isle of Man	43,710 a	28	United Kingdom	36,130
17	Austria	46,260	29	Germany	35,940
18	United Kingdom	45,390	31	Finland	35,660
19	Belgium	44,330	32	Japan	35,220
20	Kuwait	38,420 a	33	Belgium	34,760
22	Germany	42,440	34	France	34,400
23	France	42,250 b	35	Australia	34,040
25	Canada	41,730	37	Spain	31,130
27	Australia	40,350	39	Italy	30,250
28	Iceland	40,070	43	Greece	28,470
30	Japan	38,210	44	Korea, Rep.	28,120
31	Macao, China	35,360 a	45	Israel	27,450
32	Italy	35,240	46	Slovenia	26,910
33	Singapore	34,760	49	Iceland	25,220
36	Brunei Darussalam	26,740 a	50	New Zealand	25,090

PPP: GNI per capita corrected for differences in the cost of living (e.g. cost of "Big Mac", etc.)

Atlas method: exchange rates averaged over two years, corrected for inflation



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37	Spain	31,960	51	Cyprus	24,040 <sup>a</sup>
38	Hong Kong, China	31,420	52	Trinidad and Tobago	23,950 <sup>c</sup>
40	Greece	28,650	53	Saudi Arabia	22,950 <sup>a</sup>
41	New Zealand	27,940	54	Malta	22,460 <sup>a</sup>
44	Israel	24,700	55	Czech Republic	22,790
47	Slovenia	24,010	58	Oman	20,650 <sup>a</sup>
48	Cyprus	22,950 <sup>a, d</sup>	59	Portugal	22,080
49	Korea, Rep.	21,530	60	Equatorial Guinea	21,700
50	Portugal	20,560	61	Slovak Republic	21,300
53	Malta	16,680 <sup>a</sup>	63	Antigua and Barbuda	20,570 <sup>c</sup>
54	Czech Republic	16,600	64	Seychelles	19,770 <sup>c</sup>
55	Trinidad and Tobago	16,540	65	Estonia	19,280
56	Saudi Arabia	15,500 <sup>a</sup>	66	Croatia	18,420
58	Equatorial Guinea	14,980	67	Lithuania	18,210
60	Oman	12,270 <sup>a</sup>	68	Hungary	17,790
62	Slovak Republic	14,540	69	Poland	17,310
63	Estonia	14,270	70	Latvia	16,740
64	Antigua and Barbuda	13,620	71	Libya	15,630 <sup>c</sup>
65	Croatia	13,570	71	Russian Federation	15,630
66	Hungary	12,810	73	St. Kitts and Nevis	15,170 <sup>c</sup>
67	Poland	11,880	75	Mexico	14,270
68	Lithuania	11,870	76	Argentina	14,020
69	Latvia	11,860	77	Montenegro	13,920
70	Libya	11,590	78	Turkey	13,770
71	St. Kitts and Nevis	10,960	79	Malaysia	13,740
73	Seychelles	10,290	80	Romania	13,500
74	Mexico	9,980	81	Chile	13,270
75	Russian Federation	9,620	82	Botswana	13,100
76	Chile	9,400	83	Venezuela, RB	12,830
77	Turkey	9,340	84	Uruguay	12,540
78	Venezuela, RB	9,230	85	Mauritius	12,480
79	Palau	8,650	86	Gabon	12,270
80	Uruguay	8,260	87	Belarus	12,150
81	Romania	7,930	89	Bulgaria	11,950

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## Gross national income per capita 2008, Atlas method and PPP

<i>Ranking</i>	<i>Economy</i>	<b>Atlas methodology (US dollars)</b>	<i>Ranking</i>	<i>Economy</i>	<b>Purchasing power parity (international dollars)</b>
82	Brazil	7,350	90	Panama	11,650 c
83	Gabon	7,240	91	Iran, Islamic Rep.	10,840 a
84	Argentina	7,200	92	Serbia	11,150
85	Malaysia	6,970	93	Costa Rica	10,950 c
86	Botswana	6,470	94	Lebanon	10,880
87	Montenegro	6,440	95	Brazil	10,070
88	Mauritius	6,400	96	Macedonia, FYR	9,950
89	Lebanon	6,350	97	South Africa	9,780
90	Panama	6,180	98	Kazakhstan	9,690
91	Kazakhstan	6,140	99	St. Lucia	9,190 c
92	Costa Rica	6,060	100	St. Vincent and the Grenadines	8,770 c
93	South Africa	5,820	101	Bosnia and Herzegovina	8,620
94	Grenada	5,710	103	Colombia	8,510
95	Serbia	5,700	104	Dominica	8,300 c
96	St. Lucia	5,530	105	Grenada	8,060 c
97	Bulgaria	5,490	106	Peru	7,980
98	Belarus	5,380	107	Albania	7,950
99	St. Vincent and the Grenadines	5,140	108	Algeria	7,940 c
100	Suriname	4,990	109	Dominican Republic	7,890 c
101	Jamaica	4,870	110	Azerbaijan	7,770
102	Dominica	4,770	111	Ecuador	7,760
104	Colombia	4,660	112	Jamaica	7,360 c
106	Bosnia and Herzegovina	4,510	114	Ukraine	7,210
107	Dominican Republic	4,390	115	Suriname	7,130 c
108	Algeria	4,260	116	Tunisia	7,070
109	Namibia	4,200	117	El Salvador	6,670 c
110	Macedonia, FYR	4,140	118	Armenia	6,310
111	Peru	3,990	119	Namibia	6,270
112	Fiji	3,930	120	Turkmenistan	6,210 c
113	Albania	3,840	121	Belize	6,040 c
114	Azerbaijan	3,830	122	China	6,020

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115	Belize	3,820	123	Thailand	5,990
116	Iran, Islamic Rep.	3,540 <sup>a</sup>	124	Jordan	5,530
117	Ecuador	3,640	125	Egypt, Arab Rep.	5,460
118	Maldives	3,630	126	Maldives	5,280
119	El Salvador	3,480	128	Angola	5,020
120	Angola	3,450	129	Swaziland	5,010
121	Armenia	3,350	131	Bhutan	4,880
122	Jordan	3,310	132	Georgia	4,850
123	Tunisia	3,290	133	Paraguay	4,820
124	Marshall Islands	3,270	134	Guatemala	4,690 <sup>c</sup>
125	Ukraine	3,210	134	Timor-Leste	4,690 <sup>c</sup>
126	Cape Verde	3,130	136	Sri Lanka	4,460
127	China	2,940	137	Syrian Arab Republic	4,350
128	Thailand	2,840	138	Samoa	4,340 <sup>c</sup>
128	Turkmenistan	2,840	139	Morocco	4,330
130	Samoa	2,780	140	Fiji	4,270
131	Guatemala	2,680	141	Bolivia	4,140
132	Morocco	2,580	142	Vanuatu	3,940 <sup>c</sup>
133	Tonga	2,560	143	Philippines	3,900
134	Swaziland	2,520	144	Tonga	3,880 <sup>c</sup>
135	Georgia	2,470	145	Honduras	3,870 <sup>c</sup>
136	Timor-Leste	2,460	146	Indonesia	3,830
138	Micronesia, Fed. Sts.	2,340	147	Kiribati	3,660 <sup>c</sup>
139	Vanuatu	2,330	148	Mongolia	3,480
140	Paraguay	2,180	149	Cape Verde	3,450
141	Syrian Arab Republic	2,090	151	Moldova	3,210
142	Indonesia	2,010	153	Congo, Rep.	3,090
143	Kiribati	2,000	154	Micronesia, Fed. Sts.	3,000 <sup>c</sup>
144	Congo, Rep.	1,970	155	India	2,960
145	Bhutan	1,900	156	Pakistan	2,700
146	Philippines	1,890	156	Vietnam	2,700
147	Egypt, Arab Rep.	1,800	158	Uzbekistan	2,660 <sup>c</sup>
147	Honduras	1,800	159	Nicaragua	2,620 <sup>c</sup>

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## Gross national income per capita 2008, Atlas method and PPP

<i>Ranking</i>	<i>Economy</i>	<b>Atlas methodology (US dollars)</b>	<i>Ranking</i>	<i>Economy</i>	<b>Purchasing power parity (international dollars)</b>
149	Sri Lanka	1,780	160	Solomon Islands	2,580 c
151	Mongolia	1,680	161	Guyana	2,510 c
153	Moldova	1,470 e	162	Djibouti	2,330
154	Bolivia	1,460	163	Yemen, Rep.	2,210
155	Guyana	1,420	164	Cameroon	2,180
156	Solomon Islands	1,180	165	Kyrgyz Republic	2,140
157	Nigeria	1,160	166	Mauritania	2,000 a
158	Cameroon	1,150	167	Lao PDR	2,040
159	Djibouti	1,130	168	Lesotho	2,000
159	Sudan	1,130	168	Papua New Guinea	2,000 c
161	Lesotho	1,080	170	Nigeria	1,940
161	Nicaragua	1,080	171	Sudan	1,930
163	India	1,070	172	Tajikistan	1,860
164	São Tomé and Príncipe	1,020	173	Cambodia	1,820
165	Papua New Guinea	1,010	174	São Tomé and Príncipe	1,780
166	Côte d'Ivoire	980	175	Senegal	1,760
166	Pakistan	980	176	Côte d'Ivoire	1,580
168	Senegal	970	176	Kenya	1,580
169	Yemen, Rep.	950	179	Benin	1,460
169	Zambia	950	180	Bangladesh	1,440
171	Uzbekistan	910	181	Ghana	1,430
172	Vietnam	890	182	Myanmar	1,290 a, c
173	Mauritania	840 a	183	Gambia, The	1,280
174	Kenya	770	184	Tanzania	1,230
175	Comoros	750	184	Zambia	1,230
176	Lao PDR	740	187	Guinea	1,190
176	Kyrgyz Republic	740	188	Haiti	1,180 c
178	Benin	690	189	Comoros	1,170
179	Ghana	670	190	Burkina Faso	1,160
180	Haiti	660	190	Chad	1,160
182	Cambodia	600	192	Uganda	1,140

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182	Tajikistan	600	193	Nepal	1,120
184	Mali	580	194	Mali	1,090
185	Chad	530	195	Madagascar	1,040
186	Bangladesh	520	196	Rwanda	1,010
187	Burkina Faso	480	197	Ethiopia	870
188	Tanzania	440 <sup>f</sup>	198	Malawi	830
189	Uganda	420	199	Togo	820
190	Central African Republic	410	200	Mozambique	770
190	Guinea	390 <sup>a</sup>	201	Sierra Leone	750
190	Madagascar	410	202	Central African Republic	730
190	Rwanda	410	204	Niger	680
195	Nepal	400	205	Eritrea	630 <sup>c</sup>
195	Togo	400	206	Guinea-Bissau	530
197	Gambia, The	390	208	Burundi	380
199	Mozambique	370	209	Liberia	300
200	Niger	330	210	Congo, Dem. Rep.	290
201	Sierra Leone	320			
202	Eritrea	300		Afghanistan	..
203	Malawi	290		American Samoa	..
205	Ethiopia	280		Andorra	..
206	Guinea-Bissau	250		Aruba	..
208	Liberia	170		Bahamas, The	..
209	Congo, Dem. Rep.	150		Bahrain	..
210	Burundi	140		Barbados	..
				Bermuda	..
	Afghanistan	g		Cayman Islands	..
	American Samoa	h		Channel Islands	..
	Andorra	i		Cuba	..
	Aruba	i		Faeroe Islands	..
	Bahamas, The	i		French Polynesia	..
	Bahrain	i		Greenland	..
	Barbados	i		Guam	..
	Cuba	h		Iraq	..



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## Gross national income per capita 2008, Atlas method and PPP

<i>Ranking</i>	<i>Economy</i>	<b>Atlas methodology (US dollars)</b>	<i>Ranking</i>	<i>Economy</i>	<b>Purchasing power parity (international dollars)</b>
	Faeroe Islands	i		Isle of Man	...
	French Polynesia	i		Korea, Dem. Rep.	...
	Greenland	i		Kosovo	...
	Guam	i		Liechtenstein	...
	Iraq	j		Marshall Islands	...
	Korea, Dem. Rep.	g		Mayotte	...
	Kosovo	j		Monaco	...
	Mayotte	h		Netherlands Antilles	...
	Monaco	i		New Caledonia	...
	Myanmar	g		Northern Mariana Islands	...
	Netherlands Antilles	i		Palau	...
	New Caledonia	i		Puerto Rico	...
	Northern Mariana Islands	i		Qatar	...
	Puerto Rico	i		San Marino	...
	Somalia	g		Somalia	...
	United Arab Emirates	i		United Arab Emirates	...
	Virgin Islands (U.S.)	i		Virgin Islands (U.S.)	...
	West Bank and Gaza	j		West Bank and Gaza	...
	Zimbabwe	g		Zimbabwe	...
	<b>World</b>	<b>8,613</b>		<b>World</b>	<b>10,357</b>
	Low income	524		Low income	1,407
	Middle income	3,260		Middle income	6,154
	Lower middle income	2,078		Lower middle income	4,592
	Upper middle income	7,878		Upper middle income	12,297
	Low & middle income	2,789		Low & middle income	5,330
	East Asia & Pacific	2,631		East Asia & Pacific	5,399
	Europe & Central Asia	7,418		Europe & Central Asia	12,220
	Latin America & Caribbean	6,780		Latin America & Caribbean	10,309
	Middle East & North Africa	3,242		Middle East & North Africa	7,308
	South Asia	986		South Asia	2,733
	Sub-Saharan Africa	1,082		Sub-Saharan Africa	1,991
	High income	39,345		High income	37,141
	Euro area	38,821		Euro area	33,228

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## Gross domestic product 2008, PPP

<i>Ranking</i>	<i>Economy</i>	<i>(millions of international dollars)</i>
1	United States	14,204,322
2	China	7,903,235
3	Japan	4,354,550
4	India	3,388,473
5	Germany	2,925,220
6	Russian Federation	2,288,446
7	United Kingdom	2,176,263
8	France	2,112,426
9	Brazil	1,976,632
10	Italy	1,840,902
11	Mexico	1,541,584
12	Spain	1,456,103
13	Korea, Rep.	1,358,037
14	Canada	1,213,991
15	Turkey	1,028,897
16	Indonesia	907,264
17	Iran, Islamic Rep.	839,438
18	Australia	762,559
19	Poland	671,927
20	Netherlands	671,693
21	Saudi Arabia	589,531
22	Argentina	571,537
23	Thailand	519,049
24	South Africa	492,155
25	Egypt, Arab Rep.	441,584
26	Pakistan	439,036
27	Colombia	395,663
28	Malaysia	383,709
29	Belgium	369,213
30	Venezuela, RB	357,795

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31	Sweden	344,712
32	Ukraine	336,355
33	Greece	329,963
34	Switzerland	324,576
35	Austria	318,350
36	Philippines	317,110
37	Nigeria	315,030
38	Hong Kong, China	306,487
39	Romania	302,566
40	Norway	277,275
41	Algeria	276,016 <sup>a</sup>
42	Czech Republic	257,696
43	Peru	245,315
44	Portugal	245,150
45	Chile	242,398
46	Vietnam	240,093
47	Singapore	238,503
48	United Arab Emirates	226,070 <sup>a</sup>
49	Bangladesh	213,504
50	Israel	201,323
51	Denmark	201,249
52	Ireland	197,111
53	Hungary	194,023
54	Finland	188,219
55	Kazakhstan	177,354
56	Morocco	137,048
57	Kuwait	121,068
58	Slovak Republic	119,369
59	Belarus	118,695



# Economic Aggregates

Intermediate  
Macroeconomic  
Theory

Costas Azariadis

## Gross domestic product 2008, PPP

<i>Ranking</i>	<i>Economy</i>	<i>(millions of international dollars)</i>
60	New Zealand	115,378
61	Ecuador	107,946
62	Angola	106,296
63	Libya	96,675 a
64	Bulgaria	94,476
65	Syrian Arab Republic	94,243
66	Sri Lanka	91,921
67	Sudan	89,033
68	Croatia	84,621
69	Serbia	84,207
70	Tunisia	82,572
71	Dominican Republic	80,841 a
72	Azerbaijan	76,072
73	Uzbekistan	72,547 a
74	Ethiopia	70,069
75	Guatemala	65,100 a
76	Lithuania	63,217
77	Kenya	61,267
78	Oman	56,593
79	Slovenia	56,297
80	Yemen, Rep.	55,330
81	Tanzania	53,655
82	Costa Rica	50,884 a
83	Lebanon	47,891
84	Uruguay	42,456
85	Panama	42,446 a
86	Cameroon	41,860
87	El Salvador	41,675 a
88	Bolivia	41,431
89	Latvia	38,750
90	Luxembourg	38,337

# Economic Aggregates

Intermediate  
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Costas Azariadis

91	Uganda	36,871
92	Côte d'Ivoire	34,001
93	Ghana	33,907
94	Turkmenistan	33,389 a
95	Trinidad and Tobago	33,105 a
96	Nepal	31,791
97	Bosnia and Herzegovina	31,656
98	Macao, China	31,271
99	Jordan	31,200
100	Afghanistan	30,602 a
101	Paraguay	29,323
102	Honduras	28,709 a
103	Cambodia	27,997
104	Estonia	27,701
105	Botswana	25,511
106	Albania	24,251
107	Equatorial Guinea	22,329
108	Senegal	21,638
109	Georgia	21,370
110	Cyprus	21,186
111	Gabon	21,037
112	Jamaica	20,720 a
113	Congo, Dem. Rep.	20,638
114	Macedonia, FYR	20,460
115	Madagascar	20,046
116	Brunei Darussalam	19,540
117	Armenia	18,678
118	Mozambique	18,630

# Economic Aggregates

Intermediate  
Macroeconomic  
Theory

Costas Azariadis

## Gross domestic product 2008, PPP

<i>Ranking</i>	<i>Economy</i>	<i>(millions of international dollars)</i>
119	Burkina Faso	17,662
120	Zambia	17,110
121	Chad	16,106
122	Mauritius	15,327
123	Nicaragua	15,229 <sup>a</sup>
124	Mali	14,333
125	Congo, Rep.	14,265
126	Papua New Guinea	14,241 <sup>a</sup>
127	Namibia	13,409
128	Lao PDR	13,243
129	Tajikistan	13,027
130	Benin	12,715
131	Malawi	11,948
132	Guinea	11,839
133	Iceland	11,656
134	Kyrgyz Republic	11,549
135	Haiti	11,509 <sup>a</sup>
136	Moldova	10,628
137	Niger	10,033
138	Rwanda	9,934
139	Malta	9,444
140	Mongolia	9,388
141	Montenegro	8,682
142	Mauritania	6,016
143	Swaziland	5,755
144	Togo	5,357
145	Sierra Leone	4,260
146	Suriname	3,866 <sup>a</sup>
147	Fiji	3,676
148	Bhutan	3,266
149	Central African Republic	3,254

# Economic Aggregates

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Costas Azariadis

150	Lesotho	3,202
151	Eritrea	3,158 a
152	Burundi	3,090
153	Gambia, The	2,262
154	Belize	2,155 a
155	Guyana	1,940 a
156	Seychelles	1,859 a
157	Antigua and Barbuda	1,824 a
158	Djibouti	1,814
159	Cape Verde	1,747
160	Maldives	1,709
161	St. Lucia	1,684 a
162	Liberia	1,471
163	Solomon Islands	1,323 a
164	St. Vincent and the Grenadines	999 a
165	Vanuatu	920 a
166	Grenada	901 a
167	Timor-Leste	880 a
168	Guinea-Bissau	847
169	Samoa	814 a
170	St. Kitts and Nevis	795 a
171	Comoros	752
172	Dominica	636 a
173	Tonga	396 a
174	Micronesia, Fed. Sts.	315 a
175	São Tomé and Príncipe	280
176	Kiribati	240 a

# Economic Aggregates

Intermediate  
Macroeconomic  
Theory

Costas Azariadis

## Gross domestic product 2008, PPP

<i>Ranking</i>	<i>Economy</i>	<i>(millions of international dollars)</i>
	American Samoa	..
	Andorra	..
	Aruba	..
	Bahamas, The	..
	Bahrain	..
	Barbados	..
	Bermuda	..
	Cayman Islands	..
	Channel Islands	..
	Cuba	..
	Faeroe Islands	..
	French Polynesia	..
	Greenland	..
	Guam	..
	Iraq	..
	Isle of Man	..
	Korea, Dem. Rep.	..
	Kosovo	..
	Liechtenstein	..
	Marshall Islands	..
	Mayotte	..
	Monaco	..
	Myanmar	..
	Netherlands Antilles	..
	New Caledonia	..
	Northern Mariana Islands	..
	Palau	..
	Puerto Rico	..
	Qatar	..
	San Marino	..

# Economic Aggregates

Intermediate  
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Costas Azariadis

Somalia	..
Virgin Islands (U.S.)	..
West Bank and Gaza	..
Zimbabwe	..
<b>World</b>	<b>69,697,642</b>
Low income	1,366,002
Middle income	29,004,467
Lower middle income	17,109,789
Upper middle income	11,962,278
Low & middle income	30,358,339
East Asia & Pacific	10,476,082
Europe & Central Asia	5,547,202
Latin America & Caribbean	5,976,751
Middle East & North Africa	2,437,183
South Asia	4,204,164
Sub-Saharan Africa	1,712,800
High income	39,605,894
Euro area	10,899,815