

Suppose instead that economists had chosen the decade as the unit of time for measuring GDP. Then Nigeria's GDP (assuming the flow remains steady from year to year) would be roughly \$1 trillion per decade and be reported as \$1 trillion. Now Nigeria (overs over Exxon, whose puny assets are a mere one-tenth of Nigeria's GDP): to deduce the opposite conclusion, suppose the week were the unit of time for measuring GDP. Nigeria's GDP becomes \$2 billion per week, reported as \$2 billion. Now puny Nigeria stands helpless before the mighty Exxon, 50-fold larger than Nigeria.

more earlier when this distinction is first made.

Why? In context, it sounds like it just means com-

pare Nonsense

and: ;P

I simple terms a measurement can be put in a

unit, rather than calling it a dimension in and of

its own dimensions?

I missed the GDP / net worth comparison. I like

the comparisons are.

Something like "It takes me 200 seconds to walk one

mile" or "Nigeria generates nearly the same amount

of energy in this one to me as the use of "speed smaller

probably looks as crazy at first glance to an econ-

omist than GDP every day.

That makes a lot of sense.

I really like this example! It's a nice break from all the engineering stuff which is nice but can get repetitive...

Bami This was pretty excellent. Simple and devastating, lol.

Love this!

I like that both extremes are exemplified.

A valid economic argument comes either a unitless net worth or on the other hand, a unitless net worth. The mistake lies in comparing incommensurable quantities. Net worth is an amount. It has dimensions of money and is typically measured in units of dollars. GDP, however, is flow or rate. It has dimensions of money per time and typical units of dollars per year. (A dimension is general and independent of the system of measurement, whereas the unit is how that dimension is measured in a particular system). Comparing net worth to GDP compares a monetary amount to a monetary flow. ~~Because their dimensions differ, the comparison is a category mistake and is therefore guaranteed to generate nonsense.~~

Problem 5.1. Units or dimensions?

Assess the arguments and decide which is better. What about energy, charge, power, and force?

A similarly flawed comparison is length per time (speed) versus length: "I walk 1.5 m s⁻¹"—much smaller than the Empire State building in New York, which is 300 m high." It is nonsense. To produce the opposite conclusion, measure time in hours: "I walk 5400 m/hr"—much larger than the Empire State building, which is 300 m high."

I often see comparisons of corporate and national power similar to our Nigeria-Exxon example. I once wrote to one author explaining that I sympathized with his conclusion in that his argument contained a fundamental mistake. He replied that I had made an interesting point but that the numerical comparison showing the country's weakness was stronger as he had written it, so he was leaving it unchanged!

A dimensionally valid comparison would compare like with like: either Nigeria's GDP with Exxon's revenues, or Exxon's net worth with Nigeria's net worth. Because net worths of countries are not often tabulated, whereas

This note would make more sense one sentence earlier when this distinction is first made.

What are the little brackets for?

Probably a missing citation?

Is this a frequently used term I should know? Comparing two incommensurable things.

Chapter 5: Dimensions or How to Not Con-

fuse You should know something about this

I generally think of dimensions as the motion force has dimensions of "Mass * length/time

itself.

This is an interesting point — are compar-

isons like this ludicrous, but I could have easily

missed the absurd example to point out just how t-

errible it might be. I would like to note

that the Empire State Building's worth is worth a

lot of value in one year as Exxon is worth a

lot of value in one year as Exxon is worth a

lot of value in one year as Exxon is worth a

lot of value in one year as Exxon is worth a

lot of value in one year as Exxon is worth a

lot of value in one year as Exxon is worth a

lot of value in one year as Exxon is worth a

lot of value in one year as Exxon is worth a

lot of value in one year as Exxon is worth a

lot of value in one year as Exxon is worth a

lot of value in one year as Exxon is worth a

lot of value in one year as Exxon is worth a

lot of value in one year as Exxon is worth a

lot of value in one year as Exxon is worth a

lot of value in one year as Exxon is worth a

lot of value in one year as Exxon is worth a