



It is sometimes offered that the economic growth paradigm can continue if economic output becomes progressively less dependent on resource use. That is, if we reduce the amount of natural resources used to conduct human activity.

This is called “decoupling,” that is, decoupling human activity from resource use. The example of the high-tech sector is often given – that is, as we move more toward high tech we will use fewer resources.

Does decoupling offer a solution so that economic growth continues?

To answer this question, it’s important to distinguish two types of decoupling:

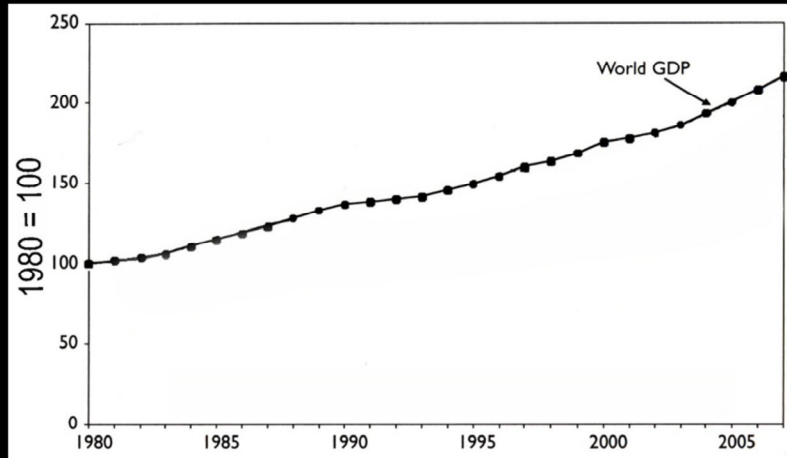
## Decoupling

- Decoupling = Economic output becomes progressively less dependent on material throughput (the amount of resources being used)
- Relative decoupling = using fewer resources (or less energy) to accomplish the same human activity
- Absolute decoupling = when the amount of resources (or energy) being used overall decreases

Decoupling means that economic output becomes progressively less dependent on material throughput – or the amount of resources used.

Relative Decoupling is frequently called “resource efficiency” or “energy efficiency” and refers to using fewer resources (or less energy) to accomplish the same human activity.

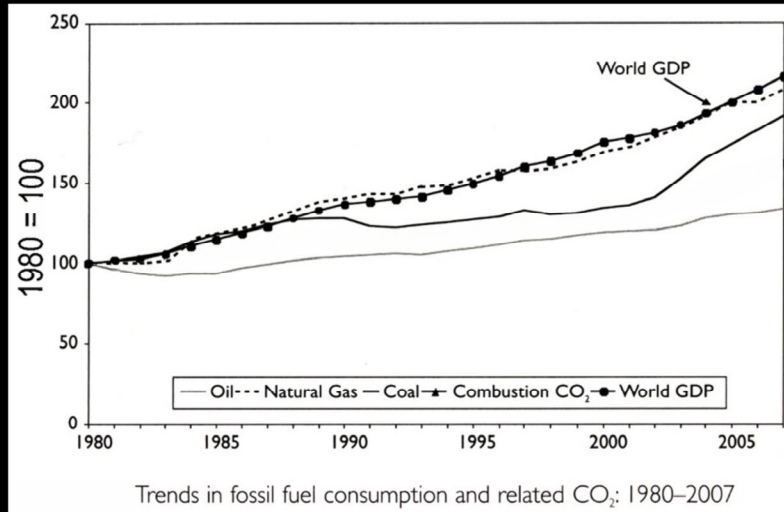
Absolute Decoupling means that the amount of resources (or energy) being used overall decreases.



Jackson, Tim. 2009. *Prosperity without Growth*. London: Earthscan. Used with permission.

This graph shows world GDP, with 1980 set as 100. You can see that GDP is increasing over the years at a rather steady rate and that it more than doubled over the time period. That is the growth paradigm.

## Decoupling - Relative

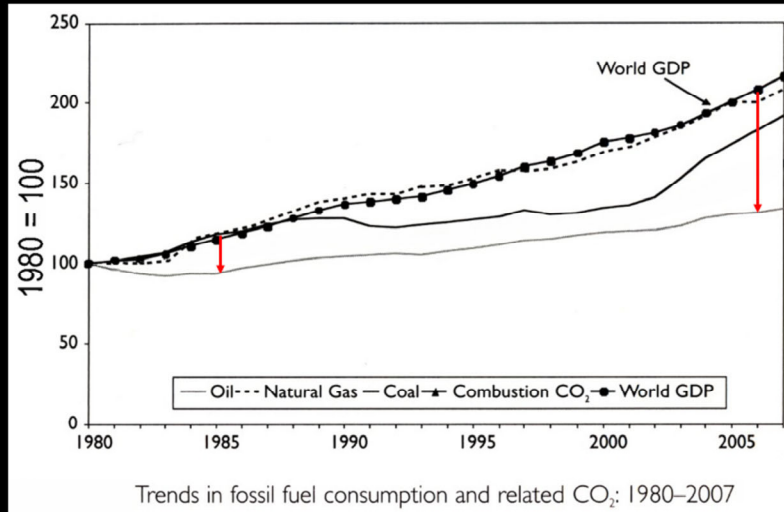


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This graph adds energy use to GDP growth over the same time period. It shows world use of oil, natural gas, and coal.

Note that natural gas has pretty much kept pace with GDP but that the gap between GDP and energy used with respect to oil and coal has increased over time which shows that less oil and coal is being used; the resource inputs of oil and coal are less for the same amount of GDP growth.

## Decoupling - Relative



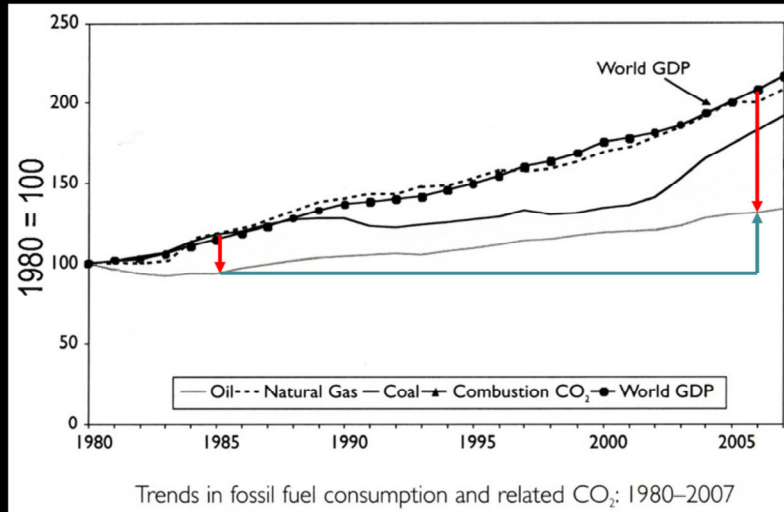
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This shows the gap with respect to oil at two time periods.

There is no doubt that relative decoupling is occurring. Many industries are doing the same amount of work (or even more work) with fewer resource inputs. For example, oil is primarily used for transportation, and vehicles had become much more efficient in 2006 than they were in 1985.

Relative decoupling is occurring.

## Decoupling - Absolute



Jackson, Tim. 2009. *Prosperity without Growth*. London: Earthscan. Used with permission.

This graph also shows the total amount of oil being used over the time period. Note that the total amount of oil energy used over the time period has increased.

Absolute decoupling is not occurring. We are still using more resources (oil energy in this case).

## Conclusion

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There is an inherent “*conflict between economic growth and biodiversity conservation (and other aspects of environmental protection).*”

This conflict can be reconciled only if “*the rate of biodiversity loss [and resources used] decreases as the economy grows.*”

Doing more with less can be a solution, IF the overall amount of resource use stabilizes or even declines, that is, IF absolute decoupling occurs.

Czech, Brian. 2008. Prospects for Reconciling the Conflict between Economic Growth and Biodiversity Conservation with Technological Progress. *Conservation Biology*, Volume 22, No. 6: 1389-1398.

Czech states that there is an inherent “conflict between economic growth and biodiversity conservation (and other aspects of environmental protection)” and that this conflict can be reconciled only IF “the rate of biodiversity loss [and resources used] decreases as the economy grows.”

So, yes, doing more with less can be a solution, IF the overall amount of resource use stabilizes or even declines. Unless absolute decoupling occurs and the overall amount of resource use declines, we are still liquidating natural resources to fuel the growth.