How an understanding of MMT can help achieve ecological sustainability in an equitable and high welfare-generating manner

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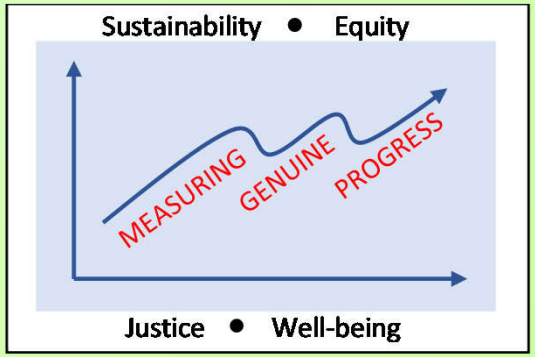

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1. MMT is a *description* of reality

- **I've chosen the title of my presentation carefully**
- **There has been a debate about whether MMT can help us establish an economy consistent with ecological limits – that is, an 'ecologically sustainable' economy**
- **Some people are claiming that MMT is only useful for promoting a growth-based economy**
- **The problem with this debate is its premise**
- **MMT is a description of the world in which we live – it is not something to be applied; it is not prescriptive**
- **Asking whether MMT is good for sustainability or for growth is like asking: "Can a round Earth rather than flat Earth help us establish an ecologically sustainable economy? Or is a round Earth only useful for promoting a growth-based economy?"**
- **Whether the Earth is round or flat is irrelevant, as is MMT**

1. MMT is a *description* of reality

- **We can choose to ignore the insights of MMT, just as we can reject the fact that the world is round not flat**
- **Ignoring the insights of MMT may not matter with regards to ecological sustainability, but it will matter in terms of what an ecologically sustainable economy would look like and what it would deliver**
- **If we (1) ignore the insights of MMT and (2) choose not to harness the full range of policy options available to a currency-issuing central govt (CICG), we may still end up with an ecologically sustainable economy, but it will almost certainly be one where there are gross inequities and a substantially reduced level of economic welfare**

2. What is MMT?

- **MMT is a description of the monetary system**
- **MMT informs us that there is a fundamental difference between a fiat-currency *issuer* and a fiat-currency *user***
- **In Australia, the only currency *issuer* (issuer of Australian dollars) is the Australian Federal Government**
- **Everyone and everything else is a currency-*user* – you, me, businesses, and State and Local Govts**
- **We demand the currency of issue because Australian dollars are required to extinguish Federal Govt tax liabilities**
- **A sufficient number of people must offer their labour or sell goods and services to the Federal Govt for there to be sufficient *base money* – the money created and spent by the Federal Govt – for all of us to pay our taxes (Note: base money is dispersed as people being paid base money spend it)**
- **By offering our labour and the goods and services we are capable of producing, the Federal Govt obtains the real resources it needs to do what govts do (or should do)**

2. What is MMT?

- **MMT highlights what archaeological evidence and anthropological studies reveal – namely:**
  - **money has always been a creature of the State**
  - **money has never emerged from barter systems (indeed, complex barter systems have never existed)**
  - **taxes create a demand for the currency of issue**
  - **money and taxes exist as a means of efficiently transferring real resources from what we call the 'private sector' to the 'public sector'**
  - **taxes don't fund CICG spending**
- **In addition, taxes destroy the *base* money spent into existence by a CICG and the *credit* money lent into existence by banks**
- **Taxes enable a CICG to regulate non-govt spending – this enables a CICG to ensure total spending within the economy does not exceed the economy's productive capacity (i.e., it enables a CICG to use taxes to prevent hyperinflation)**

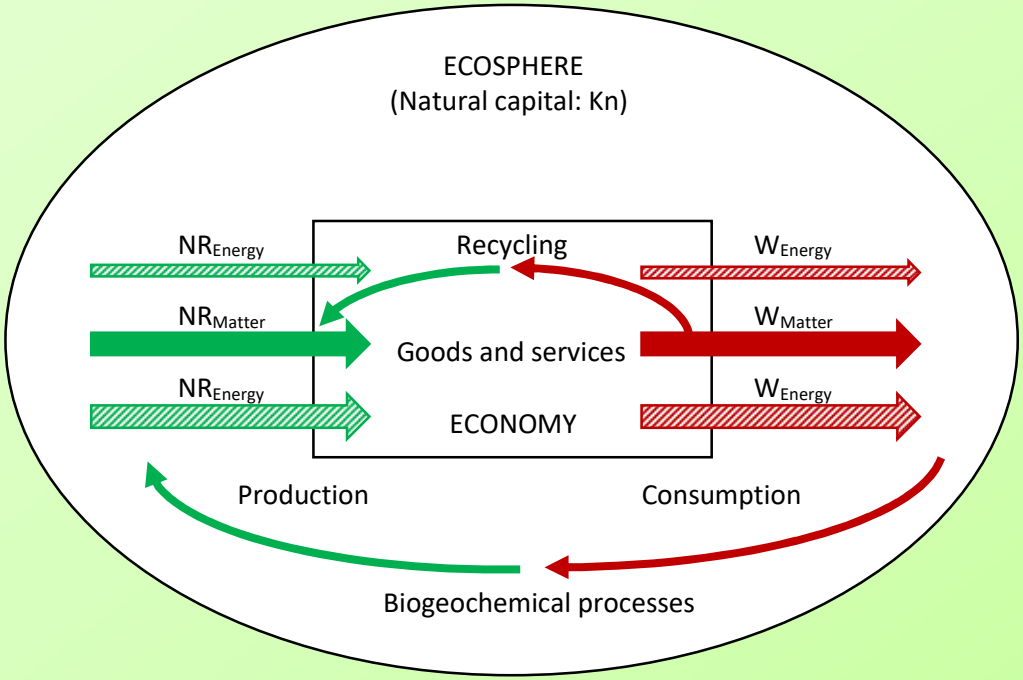
2. What is MMT?

- **The ability of a CICG to create base money at will and spend it into existence means a CICG can always use its fiscal capacity to mobilise idle real resources, so long as the payments to obtain the resources are denominated in the currency that it issues**
- **No available resource need go unused, which matters if the unused resource is a human being wanting work – not so important if the unused resource is a hammer**
- **A CICG can always use its fiscal capacity to achieve and maintain full employment (Job Guarantee)**
- **If, in helping a nation achieve its goals, a CICG spends more than it taxes (fiscal injection), big deal!**
- **A fiscal injection (aka 'budget deficit' or 'non-government surplus') does not reduce a CICG's ability to spend**
- **From the perspective of a CICG, the question is never "How do we finance project X?", but "How do we resource project X?"**

3. What must we sustain?

- **The economy is a provisioning system – it provides goods and services to satisfy our needs and wants (ends)**
- **The economy also provides opportunities to engage in fulfilling and socially-inclusive endeavours, such as meaningful employment and the production and maintenance of necessary, desired, and beautiful (pleasurable) things**
- **The economy and the goods it generates are the *means* to our *ends* – they are never ends in themselves**
- **Hence, GDP should always be viewed as a means not an end**
- **To ensure the ongoing achievement of our ends (goals), the economy – as a provisioning system – needs to be 'sustained'**
- **The economy doesn't provide everything – the ecosphere provides ecosystem services that the economy cannot**
- **We must ensure these services are also sustained**

3. What must we sustain?

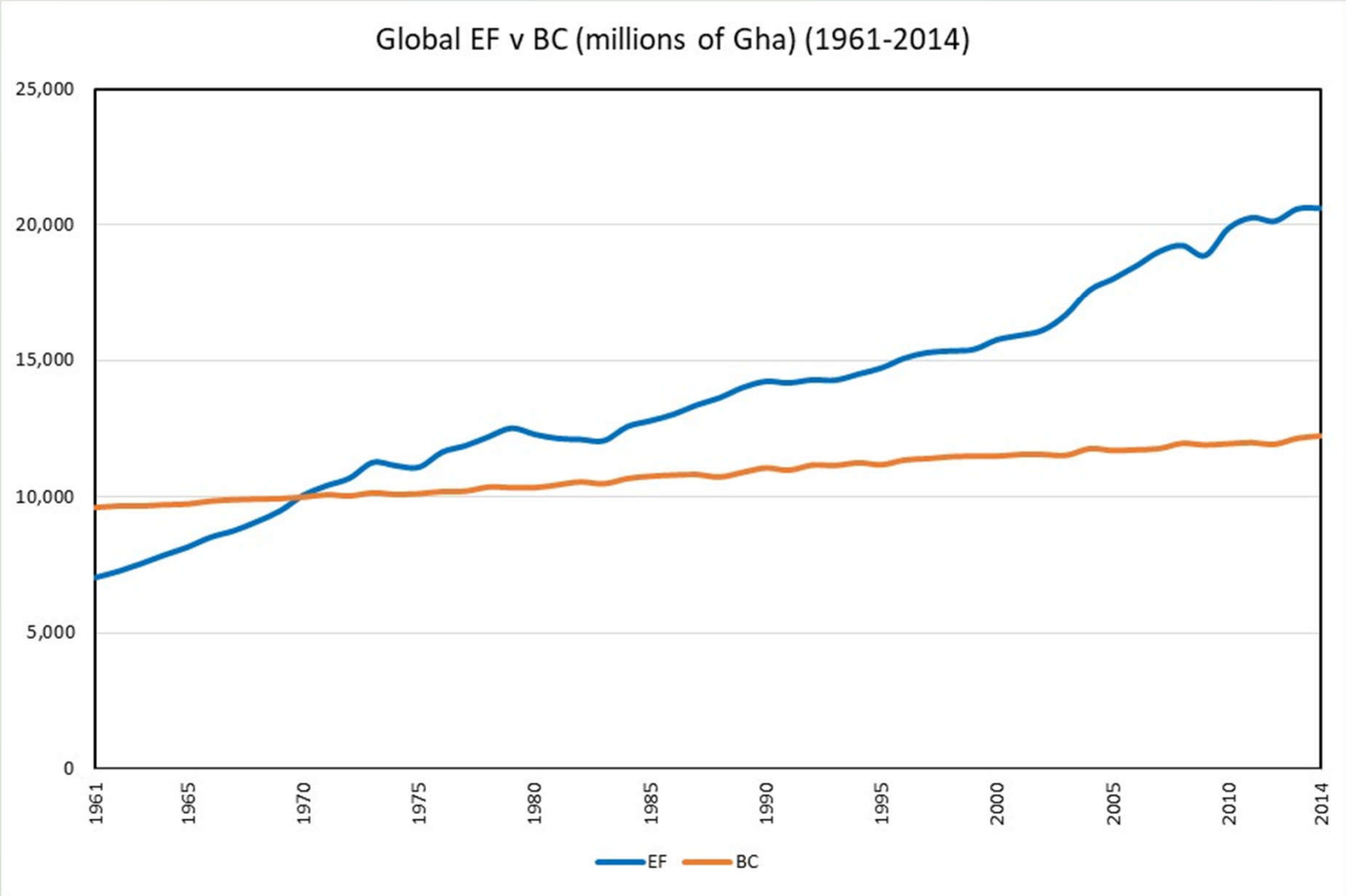


- **Sustainability requires (Figure 1):**
  1. **Renewable NR input ≤ regeneration rate of renewable Kn**
  2. **Non-renewable NR input ≤ cultivation of renewable NR substitutes**
  3. **Waste (W) ≤ waste assimilative capacity of the ecosphere**
  4. **Sufficient ecosystems preserved to maintain critical ecosystem services**

3. What must we sustain?

- **We are operating unsustainably (in the long-run) if any one of the four sustainability precepts is violated**
- **More generally, unsustainability occurs if Ecological Footprint (*F*) > Biocapacity (*B*)**
  - **Global *F* = 1.7 × global *B* (i.e., global economy is 70% larger than what the Earth can ecologically sustain)**
    - ➢ **Figure 2**
  - **Global *F* first exceeded global *B* around the early-1970s, ironically about the time *The Limits to Growth* (Club of Rome, 1972) was released**
  - **Two-thirds of all nations have national *F* > national *B***
  - **Most countries will need to reduce their rate of natural resource (NR) use and waste (W) generation to again operate sustainably**

4. How do we ensure we operate sustainably?



4. How do we ensure we operate sustainably?

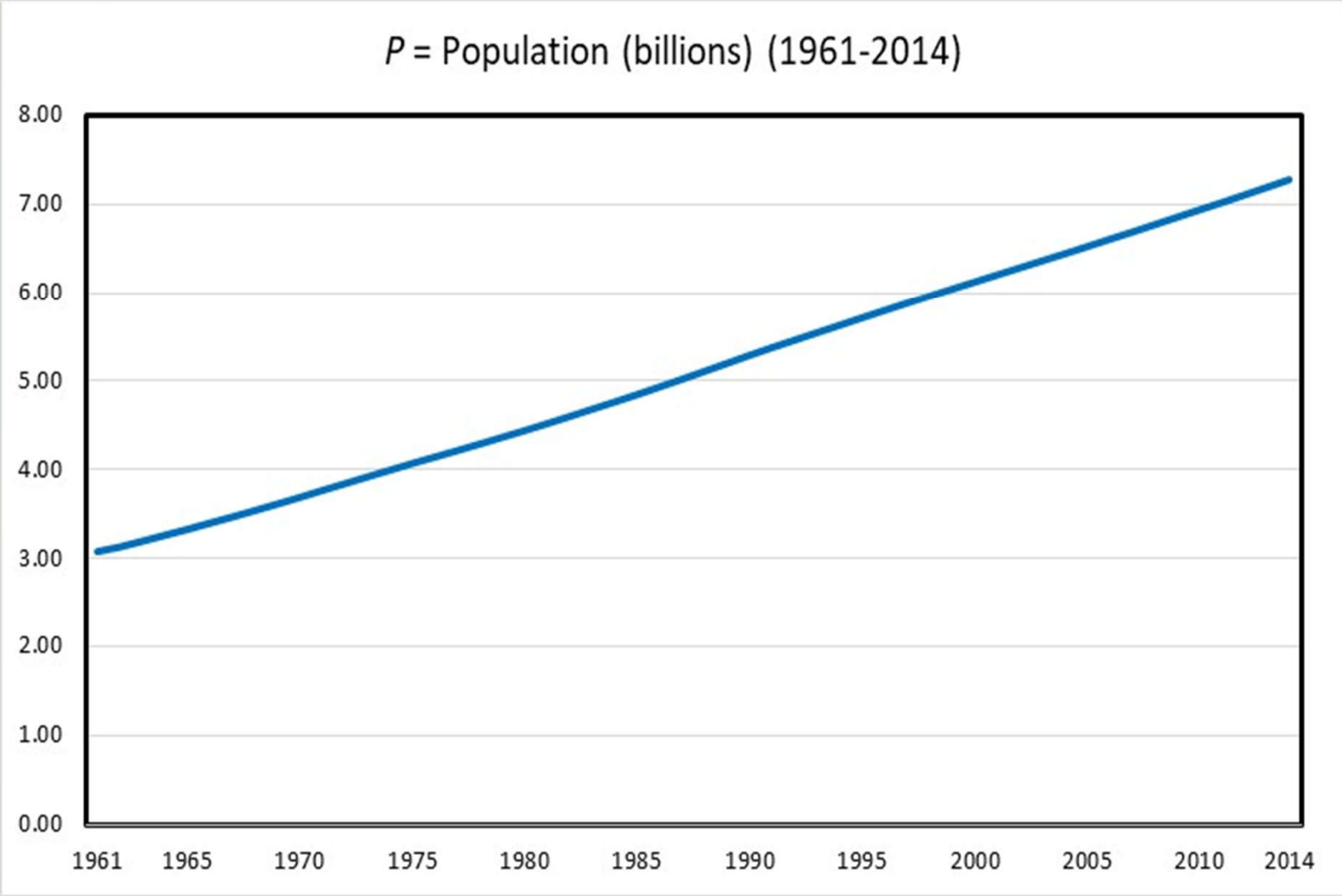
- **Could we impose taxes on natural resource use and waste generation (eco-taxes) to ensure we adhere to the four sustainability precepts (i.e., to ensure $F \leq B$)?**
- **We could, but it wouldn't work!**
  - **Note: A central govt can impose eco-taxes whether or not it is a CICG**
  - **Eco-taxes merely help reduce the resource-intensity and waste-intensity of GDP (i.e., they help increase the technical efficiency of production)**
  - **Consider a variant of Paul Ehrlich's I = PAT identity**
  - **$F = P \times A \times R$ (i.e., F = GDP × R)**
    - **F = Ecological Footprint**
    - **P = Population**
    - **A = GDP/Population (per capita affluence)**
    - **R = F/GDP (resource-intensity of GDP)**
  - **F = Population × GDP/Population × F/GDP**

4. How do we ensure we operate sustainably?

- If $P\uparrow \times A\uparrow$ (i.e., if GDP↑) and R is unchanged, $F\uparrow$
- If $R\downarrow$ and $P \times A$ is unchanged (i.e., if GDP unchanged), $F\downarrow$
- If $P\uparrow \times A\uparrow$ (i.e., if GDP↑) > $R\downarrow$, $F\uparrow$
- This is what has been happening globally over the past 50 years
- Figure 3 (*P*)
- Figure 4 (*A*)
- Figure 5 (*R*)
- Figure 6 (*F*)
- Overall effect? $F\uparrow \approx P\uparrow \times A\uparrow \times R\downarrow$
- $F\uparrow \times 2 \approx (P\uparrow \times 2) \times (A\uparrow \times 2) \times (R\downarrow \times 0.5) \approx 2 \times 2 \times 0.5 \approx 2$
  - ➢ **Because of the growth in *P* and *A*, *F* is rising!**

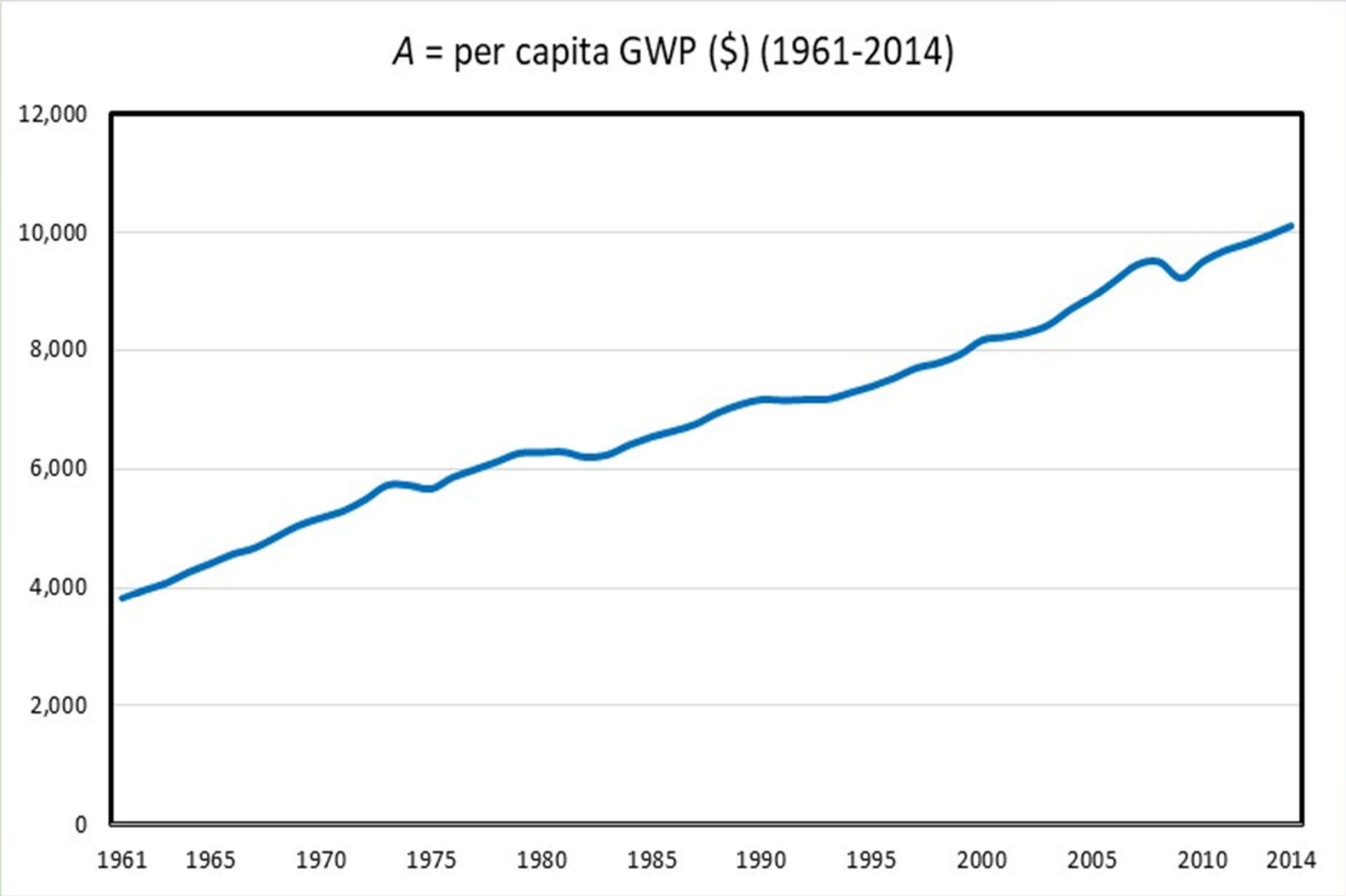
4. How do we ensure we operate sustainably?

- ***P* has been rising**



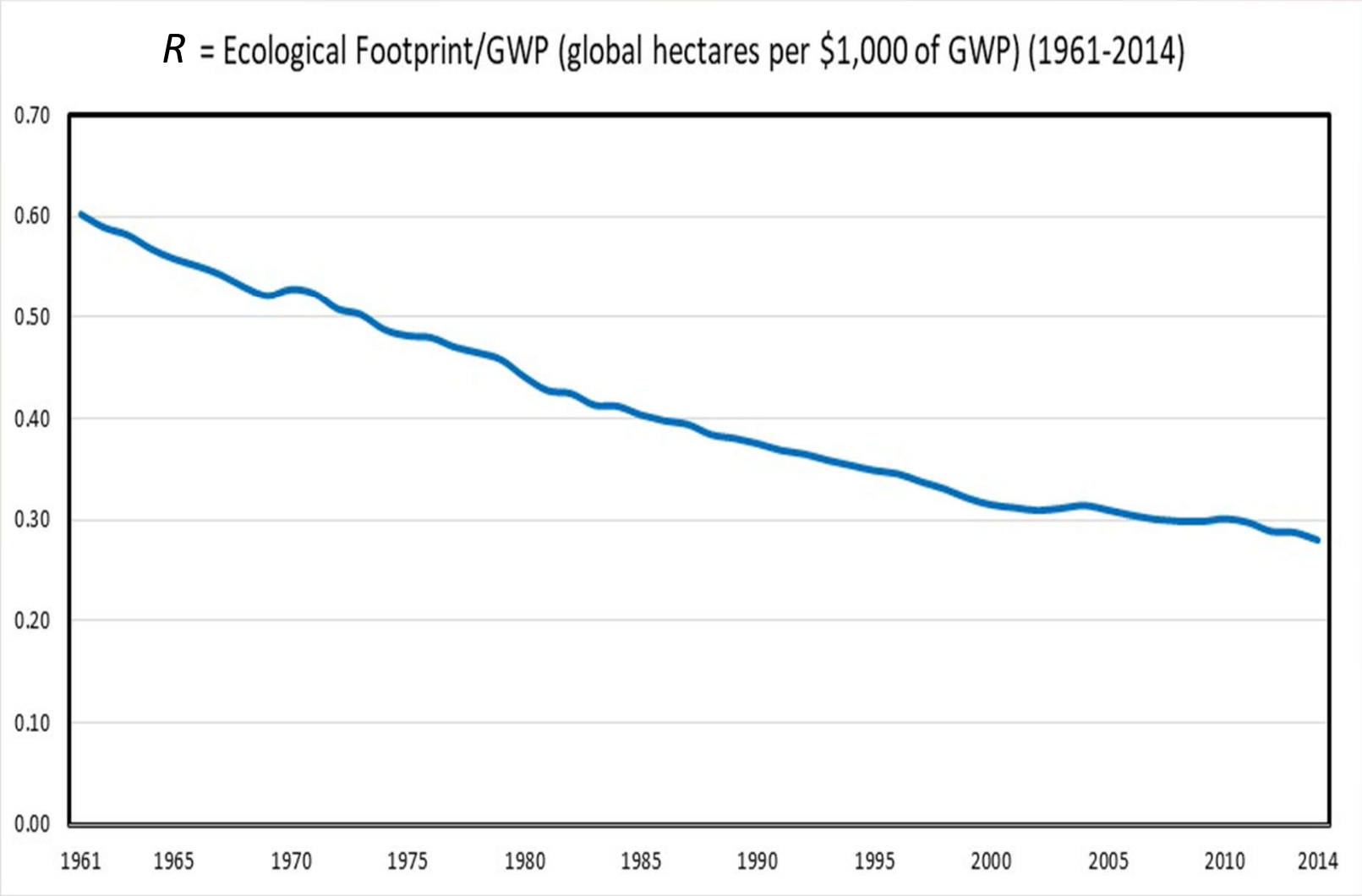
4. How do we ensure we operate sustainably?

- ***A* has been rising**



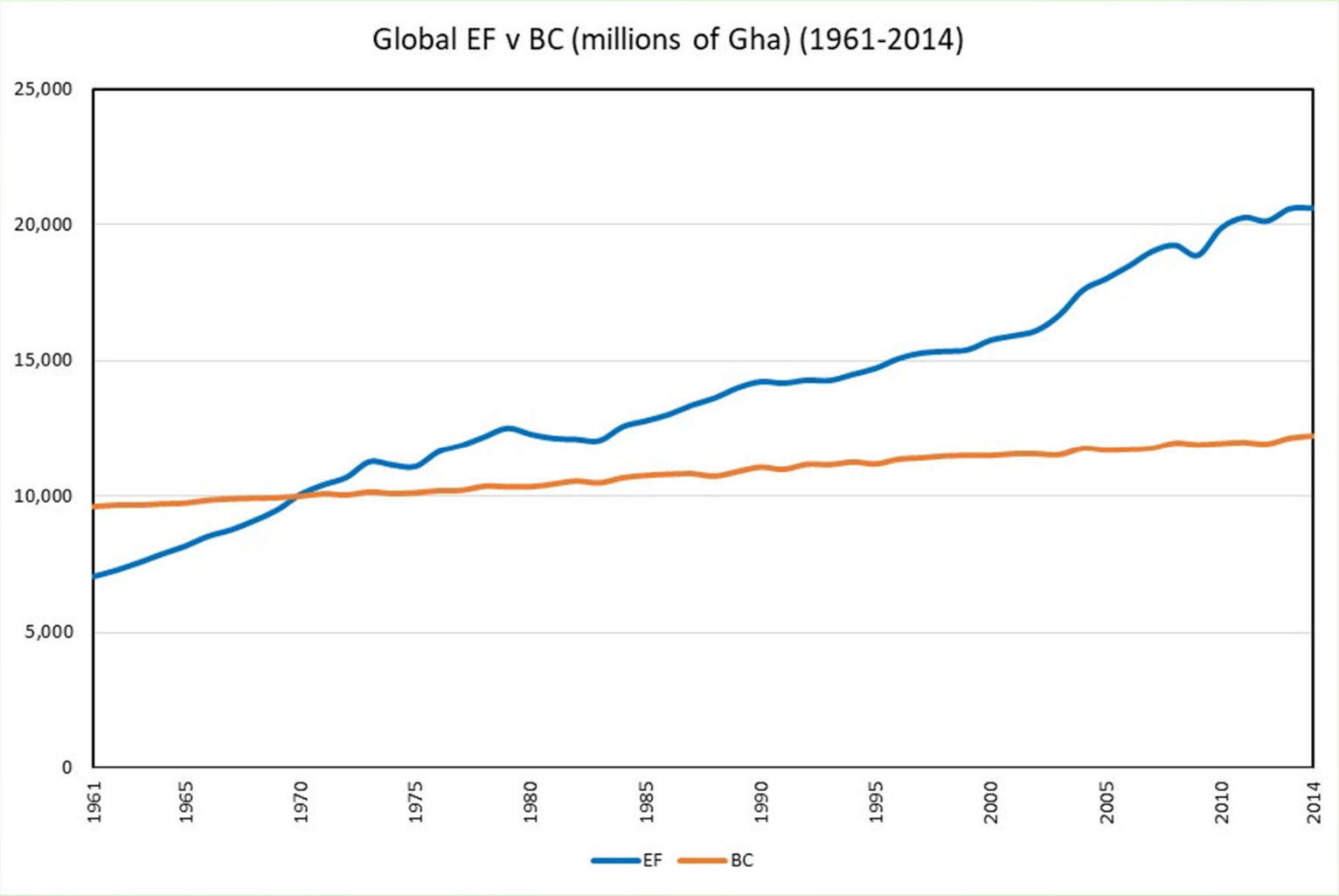
4. How do we ensure we operate sustainably?

- ***R* has been falling**



4. How do we ensure we operate sustainably?

- ***F* has been rising (blue line)**



4. How do we ensure we operate sustainably?

- If $P\uparrow \times A\uparrow$ (i.e., if GDP↑) and R is unchanged, $F\uparrow$
- If $R\downarrow$ and $P \times A$ is unchanged (i.e., if GDP unchanged), $F\downarrow$
- If $P\uparrow \times A\uparrow$ (i.e., if GDP↑) > $R\downarrow$, $F\uparrow$ (Figures 3-6)
- Eco-taxes would help reduce *R*, but would do nothing to limit the increase in *P* and *A* (i.e., do nothing to limit growth of GDP)
- Eco-taxes cannot, therefore:
  1. guarantee a reduction in *F* if, currently, $F > B$ (even if *R* is falling)
  2. prevent *F* from rising above *B* if, currently, $F < B$ (even if *R* is falling)
- <u>Eco-taxes cannot ensure ecological sustainability</u>
- Guaranteeing ecological sustainability requires <u>quantitative restrictions</u> on the rate of resource use and waste generation (i.e., direct regulation)
- A central govt need not be a CICG to impose such restrictions
- <u>Monetary sovereignty is not necessary to achieve sustainability</u>

5. Cap-auction-trade systems (CATS)

1) *Caps* on rate of resource and rate of waste generation ensure ecological sustainability (caps would exist in the form of a limited number of issued permits)

- **Permits are forfeited as resources are extracted and wastes are generated (e.g., 1 permit = 1 cubic tonne of saw logs; 1 permit = 1 tonne of CO_2 emissions)**
  - **Caps keep $F \leq B$**
  - **This aspect of CATS is not market-based**

2) Permits are initially *auctioned* by a govt authority

- **Permits can then be bought and sold in permit markets**
- **Permits would have limited life (say, expire if unused within one year) to prevent speculative activity in permit markets**
- **New batches of permits would be auctioned every year, which would allow the govt authority to vary the number of issued permits in light of data on ecological/resource system changes or the need to cut levels (e.g., gradual cut in CO_2 emissions)**

5. Cap-auction-trade systems

- **Permit prices serve as taxes on resource use and waste generation**
  - **Demand side – there would be a change in demand towards low resource-intensive and low pollution-intensive goods and services (they become relatively cheaper)**
  - **Supply side**
    - **Where goods have *private goods* characteristics – the private sector *likely* to supply low resource-intensive and low pollution-intensive goods and services in sufficient quantities to meet changing demand**
    - **Where goods have *public goods* characteristics – the private sector *unlikely* to supply low resource-intensive and low pollution-intensive goods and services in sufficient quantities to meet changing demand**

5. Cap-auction-trade systems

- Adequate provision of low resource-intensive and low pollution-intensive public goods (especially infrastructure) will depend on government investment/spending
- Same also with regards to R&D into 'green' technologies
- Not a 'financing' problem if the central govt is a CICG
- It is a potential 'financing' problem if the central govt is not a monetary sovereign (e.g., Eurozone nations, State and Provincial Govts)

- Permit prices help reduce *R*, but maximum reduction in *R* is still dependent on govt investment in low resource-intensive and low pollution-intensive infrastructure and technologies
- MMT knowledge: Maximum reduction in *R* is dependent on:
  - (1) the central govt being a CICG
  - (2) the central govt exploiting its fiscal capacities to provide the necessary 'green' infrastructure
- Significance?

6. Economic welfare significance of reducing *R*

- $F = P \times A \times R \rightarrow F = \text{GDP} \times R$
- $\therefore R = F/\text{GDP}$
- $\therefore \text{GDP} = F/R$
- If *F* must be quantitatively limited to ensure $F \leq B$, how much GDP a nation can ecologically sustain will depend on what happens to *R*
- Assume the following:
  - $F = 1{,}000$ (embodies 1,000 units of matter-energy)
  - GDP = 500 (embodies 500 units of matter-energy)
  - Production waste = (embodies 500 units of matter-energy)
- $R = F/\text{GDP} = 1{,}000/500 = 2$
  - Note: 1st and 2nd laws of thermodynamics forbid $R \leq 1$
  - There cannot be more m/e embodied in the GDP produced than the m/e embodied in the natural resources being transformed to produce GDP
  - There must be some production waste = *F* – GDP

6. Economic welfare significance of reducing *R*

- **If *B* = 800, *F* must be reduced to 800 (at least) to achieve ecological sustainability**
- **If *R* remains at 2, GDP = *F*/*R* = 800/2 = 400**
  - **Maximum sustainable GDP = 400**
- **If GDP needs to remain at 500 to achieve a nation's ends/goals (maintain economic welfare), the nation must reduce *R* to 800/500 = 1.6 (*R* = *F*/GDP)**
- **MMT understanding of the fiscal capacities of a CICG is necessary to maintain economic welfare should the rate of throughput (natural resource input an waste output) need to be limited/reduced**

7. Equity implications? – Income distribution

- **CATS – Because the prices initially paid to acquire auctioned permits serve as resource-use taxes and pollution taxes (eco-taxes), they destroy some of the spending power of the individuals and organisations engaged in the production and consumption of high resource-intensive and high pollution-intensive goods and services**
  - **Note: It is possible to avoid 'eco-taxes' to a large extent by shifting spending towards low resource-intensive and low pollution-intensive goods and services – the aim of CATS**
  - **CATS are not designed to raise revenue to finance govt spending or redistribute to the populace – if the central govt is a CICG, it already has the fiscal capacity to do this**
- **The destruction of some spending power allows a CICG to reduce income tax rates on low-income people – this would narrow the income gap between rich and poor plus protect the people most vulnerable to the impact of eco-taxes (the poor)**

7. Equity implications? – Full employment

- Equity is about what is fair and just – it has a moral foundation
- Outcomes with a moral foundation take precedence over benefit-cost considerations (consider debate over COVID-19 restrictions)
- Unemployment leads to social exclusivity and contributes enormously to mental illness, homelessness, substance abuse, crime, family breakdown, and physical and sexual abuse
- Failure to provide paid work to everyone who desires it is a moral failure of society
- As mentioned earlier, MMT informs us that a CICG can always use its fiscal capacity to achieve and maintain full employment
- Because achieving ecological sustainability will place limits on the growth in a nation's GDP (and may lead to declines in GDP or 'degrowth'), the importance of a Job Guarantee will be greater than ever – may require higher taxes on rich to fit everyone in a restricted GDP

8. Conclusions

- **Achieving ecological sustainability will require quantitative limits on the rate of resource use and waste generation**
  - **This can be achieved whether or not the central govt is a CICG**
  - **A knowledge and understanding of MMT is not necessary to achieve ecological sustainability**
- **Operating an ecologically sustainable economy will place restrictions on GDP and may lead to reductions in GDP (degrowth)**
- **How much GDP will decline will depend on how efficiently we can use the sustainable resource flow – this will depend, to a large extent, on CICG investment in 'green' infrastructure given that much of it will possess public goods characteristics**
- **Restrictions on GDP will also increase the importance of redistribution and make the need for a JG greater than ever**
- **A knowledge and understanding of MMT and the crucial role of CICGs will also be greater than ever to achieve ecological sustainability in an equitable and welfare-friendly manner**