



The Production Boundary & Empirical Constructs: The Implicit Foundations of National Accounts

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Overview

- ▶ Economic data – empirical constructs vs primary facts
 - ▶ Empirical constructs as inherently theory-laden
 - ▶ Definitions of production as the embodiment of Schumpeter's "vision"
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Overview

- ▶ Theoretical demarcation of macroeconomic aggregates – the production boundary
- ▶ Kuznets' - Scope, Valuation, Netness
- ▶ No single, correct boundary – theory determined
- ▶ Comparison of GDP, neoclassical-utilitarian, and Marxian boundaries



Overview

- ▶ Key issues for illustration:
 - ▶ R&D
 - ▶ Banking
 - ▶ Gov't & Regrettable Necessities
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Empirical Constructs vs Primary Facts

- ▶ Richard Stone – Role of Measurement in Economics
- ▶ Primary facts are, for Stone, comprised of descriptive material and historical data. Much of this material will not involve measurement at all, or only in rough form, such as descriptions of organizations/institutions.
- ▶ Much of the quantitative primary facts come from “natural” record keeping – i.e. accounting – but this tends to be on a very small/micro level and be specific to the firm/organization at hand. Then we have official statistics which come from intentional (state) collection for the purposes of economic analyses (among other uses).
- ▶ “It is not as a rule hard to find a definition for items of this kind and the problem of obtaining information about them lies largely in the administrative and technical difficulties of collection.”
- ▶ Basically, primary facts are there - however difficult it may be to find/measure them, they are there for the measuring.

Empirical Constructs vs Primary Facts

- In addition to the primary facts that make up this body of descriptive material, Stone recognizes what he terms “empirical constructs” – which become our primary focus.
- “On the other hand there are many items, similar to primary facts in having a counterpart in the actual world, but which are not capable of being apprehended in the same simple manner.”
- Perhaps, he suggests, this difference is merely one of degree. But...
- “In attempting to give quantitative expression to empirical constructs, such as the national income, it is now generally recognized that a theoretical basis is necessary and that this basis should be the conscious concern of economists”

Empirical Constructs vs Primary Facts

- ▶ “No amount of searching in primary records, that is the originating entries, actual or imputed, in the books of a firm or individual, will enable us to detect the income that has been made. To ascertain income it is necessary to set up a theory from which income is derived as a concept by postulation and then associate this concept with a certain set of primary facts.”
- ▶ “To be sure the theory must take into account possible primary facts if it is to be of any practical use since if it does not the theoretical concept of income will be left hanging in the air, with no empirical correlate”
- ▶ “But some theory is necessary since without it income does not reveal itself in the simple way as do the individuals and pieces of equipment which are largely responsible for generating it.”
- ▶ Possessing a dollar is a primary fact, but referring to it as “income” requires a theoretical definition of “income”



Macro Aggregates as Empirical Constructs

- “In practice one does not as a rule have the information one wants but something rather different, with the consequence that tedious and uncertain adjustments, if not wholesale guesswork, must be made in order to estimate what is required.”
- The primary empirical constructs I’m concerned with are aggregate measures of income and production – i.e. GDP
- But herein lies the problem – GDP is constructed based upon a particular theoretical perspective
- Contrary to a conventional wisdom, this theoretical perspective is not strictly neoclassical, but rather a hybrid of NC & Keynesian views filtered thru “pragmatic” accounting approach implementation



Macro Aggregates as Empirical Constructs

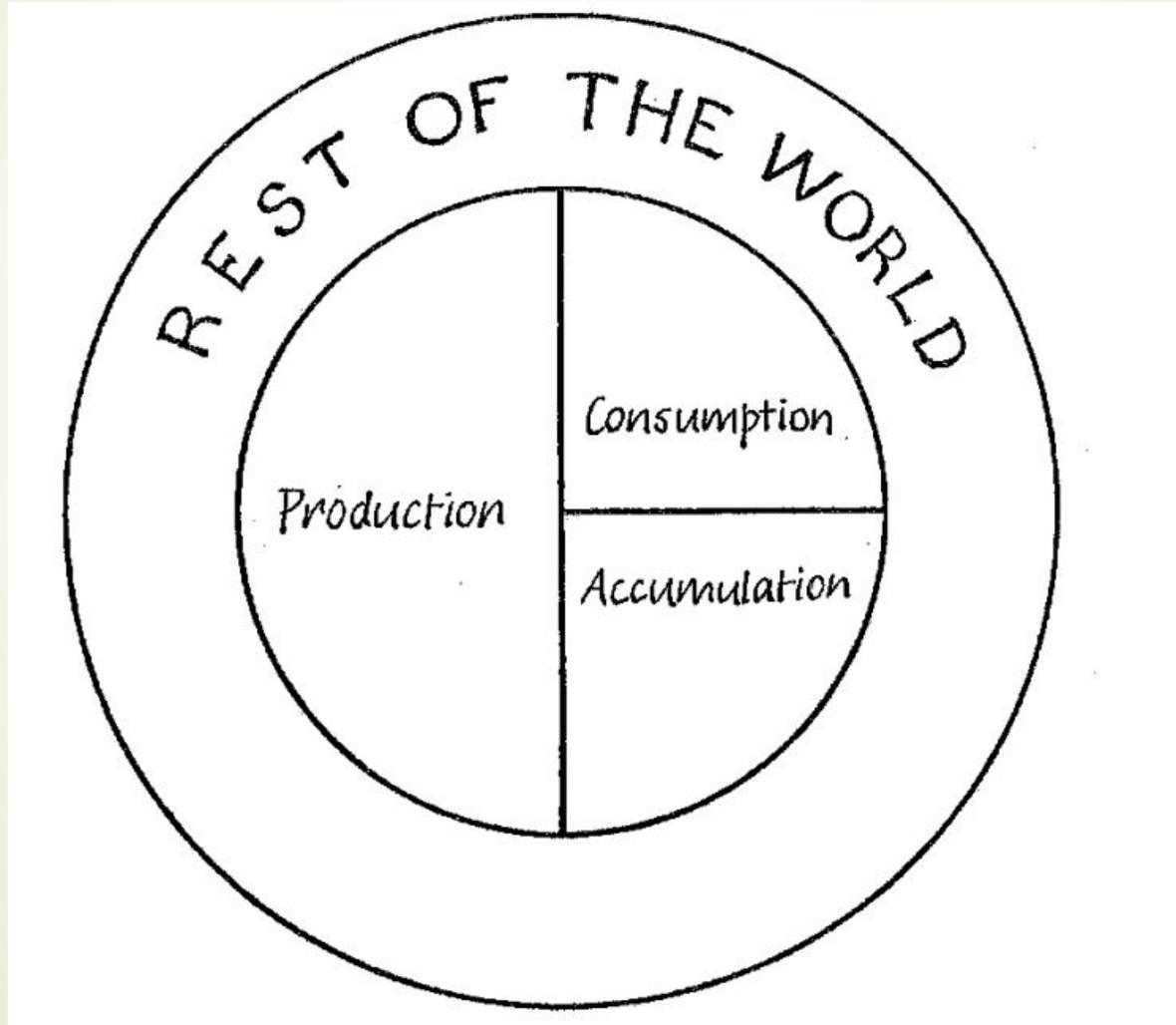
- Despite claims of “positive” (value-free) economics, ideology has always played an important, although generally implicit role
- Schumpeter suggests that ideology “enters on the very ground floor, into the pre-analytical cognitive act with material provided by our vision of things”
- “this vision [being] ideological almost by definition” because “it embodies the picture of things as we see them.”



The Production Boundary

- ▶ W.r.t. constructing aggregate measures of income, the most important part of our “vision” is the location of the production boundary
 - ▶ That is, which activities contribute to the production of new income, and which do not?
 - ▶ Answers have varied over the history of economic thought
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The Production Boundary





Scope, Valuation, Netness

- ▶ “These questions were the foci of repeated discussions in the economic literature going back now some two centuries, or longer.”
- ▶ By “inclusion” or “scope”, Kuznets means both the defining of the boundary between the economic and noneconomic realms and the distinction between productive and unproductive activities.
- ▶ “Netness” means “distinguishing between costs and returns, between intermediate and final products.”
- ▶ Kuznets defines “valuation” as a “meaningful weighting system” that allows the user to “combine the diverse costs and net economic products.”



Scope



- ▶ What is the economy/economic activity?
 - ▶ Market boundary?
- ▶ Which economic activities are production?
 - ▶ All economic activities?
 - ▶ Market boundary?
- ▶ General economic consensus of limitations to human activity
- ▶ This session is based on the assumption that the environment qua biosphere should be included



Scope



- ▶ John marries his maid – what happens?
- ▶ Well-being remains constant
- ▶ GDP declines
- ▶ Feminist critique highlights problem of restrictive boundary - how much economic “growth” is due to moving activities to the market?



Netness

- ▶ Potentially arbitrary definition – have to define “final” goods in circular flow
- ▶ “the sovereign boundary-drawer could relabel *as productive yet intermediate* goods and services that would otherwise appear as final product or as transfer out of final product.” (Boss 1990)
- ▶ Gov’t & other “regrettable necessities” subject to frequent debate
- ▶ Nordhaus & Tobin (1972) – “disamenities of urbanization”



Netness

- ▶ Are wages inputs or outputs?
- ▶ Sraffa suggests (and then assumes away...) a “double character of the wage”
- ▶ “The ever-present element of subsistence” that represents an intermediate input in the same sense as “fuel for the engines or feed for the cattle”
- ▶ Wages above this then constitute “a share of the surplus product.”



Theories of Value – Subjective vs Objective

- ▶ Valuation provides a further complication as all the perspectives we're going to look at use the obvious & available measuring rod of money, but major distinctions can be found in what is supposed to "cause" money prices
- ▶ Subjective theories of value (neoclassical-utilitarian) explain prices with consumers' subjective assessments, with price thereby representing marginal utilities
- ▶ Objective theories suggest the value of a commodity can be explained exclusively from an examination of the sphere of production (i.e. labor values, prices of production)
- ▶ "Philosophically speaking, the objective approach says that value is produced in the material universe, whereas the subjective approach says it is produced in the minds of individuals"

A tale of 3 boundaries

Paradigm	Scope	Netness	Valuation
Neoclassical- utilitarian	Intentional activity Or Delegation criteria	X goods or Z goods?	Utility
GDP	Market transactions + (limited) imputations	Varies, pragmatic, Gov't as Final	Money (atheoretical?)
Marx	Production activity (narrowly defined) exchanged against K	Nonproduction activities as social consumption	Labor time



GDP vs Utility

- ▶ Prices = MU if – perfect comp, perfect info, no income/wealth inequality, etc
- ▶ The market boundary – i.e. feminist critique
- ▶ X goods vs Z goods (is the economy itself intermedialte?)
- ▶ Edgeworth-Bowley Box vs Social Balance Sheet



GDP vs Marx

- ▶ Market boundary *is* the appropriate scope (no imputations necessary)
- ▶ But overly inclusive – trade, finance, gov't all unproductive
- ▶ Inputs to finance and gov't instead treated as redistribution of output – social consumption



R&D

- ▶ Is research only an input?
 - ▶ Prior to 2008/2013 R&D was always intermediate
- ▶ Or is it an output as well?
 - ▶ 2008 SNA, 2013 Comprehensive Revision of NIPAs
 - ▶ R&D as production of “fixed asset”
- ▶ 2% increase in GDP



Banking Problem

- ▶ Are banks productive?
 - ▶ For Marx, of course not
 - ▶ For national accounts – net negative output
- ▶ Banks engage in
 - ▶ Fee-based services
 - ▶ Proprietary trading
 - ▶ Financial intermediation
- ▶ FI is the problem – major activity, no explicit payment
 - ▶ Since costs generally exceed explicit payments, negative output



Banking Problem

- ▶ Old solution – IBSC
 - ▶ Imputed charge applied to other industries as input – reduces their net outputs
 - ▶ US – added fictitious industry as sole purchaser of IBSC
 - ▶ Intermediation stuck as intermediate only (no impact on GDP)
- ▶ New consensus solution: FISIM
 - ▶ Spread between risk-free RoR & interest paid
 - ▶ Added as if explicit transaction



Banking Problem

- Result
 - Goldman Sachs employees as “most productive in the world”
 - Not only including, but *especially* during 08 financial crisis
 - Banking output grows due to FISIM
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Regrettable Necessities

- ▶ How do we treat things society “needs”, but might be generally objectionable?
- ▶ Key question in early national accounting given development in WWII
- ▶ Is war production an intermediate input to national income, or is it the final product? Is it income?
- ▶ Do war expenditures contribute to national income or drain it?



Regrettable Necessities

- ▶ Kuznets argued for the latter – gov't is necessary but intermediate only
- ▶ However, this shows output decreasing as war production ramps up
- ▶ GDP qua official statistic instead treats gov't spending as all final – thus more bombs = more income



Regrettable Necessities

- ▶ It's also possible to conceive of such "regrettable necessities" in yet another way – as forms of social consumption
 - ▶ Rather than as an input or form of value added (output), war production represents a drain on the private economy
 - ▶ It is a cost, paid by the production of income elsewhere in the economy
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Regrettable Necessities

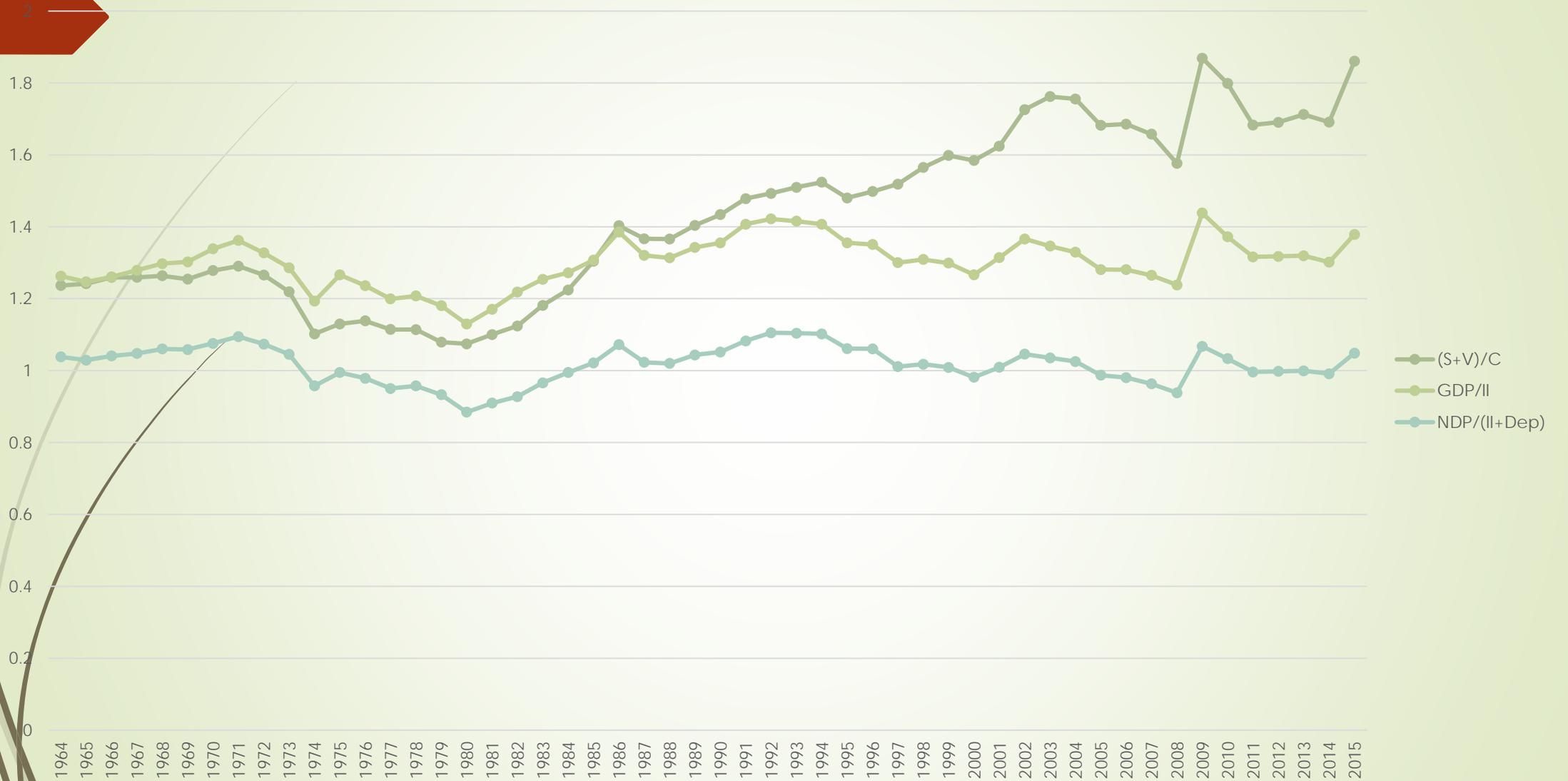
- ▶ Marx viewed many such activities (including broader “costs of circulation”) as redistributions of surplus value
- ▶ Consider: trade margins vs interest payments
 - ▶ Trade margins realize value from production
 - ▶ Interest represents a redistribution of income, but not new income in itself
- ▶



Regrettable Necessities

- ACS conference costs more than other (econ) conferences I've been to
- Of the money we paid for this, what components added value?
- Do the registration Nazis add value to your conference (intermediate input?), or are they a final consumption good?
- Are they an input to the production of your conference value, or are they paid out of a redistribution of the conference's income?

"Netness" Ratios (Output/Input)



"Netness" Ratios (Output/Total Product)

0.7

0.6

0.5

0.4

0.3

0.2

0.1

0

1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015

- S/TV* = Profit Margin
- NDP/TV
- GDP/TV
- (NDP-EC)/TV
- (S+V)/TV*

