

Duplicate Outlines

M. Bower

Outline of August 1, 1971

M. Mason Gaffney

Full Employment, Capital, and the Limits of the Earth.

Introduction: The unresolved problem of unemployment

I. Market mechanisms for housing on full employment ??

A. Micro mechanisms for full employment

1. The variability of factor proportions, and sensitivity to parameters.
2. Substitution between labor and capital
 - a. Appreciating capital
 - b. Depreciating capital
 - c. Flexible factor mix employs idle resources
3. "Intensity", or substituting labor-and-capital for land
 - a. Classical diminishing returns
 - b. Increasing social returns
 - c. Using capital to develop new land
 - d. Do resources and waste-disposal limit employment?
4. Substituting labor for capital-and-land: the way to full employment
5. What determines rotation of capital and renewal of land?
 - a. Appreciating capital
 - b. Depreciating capital
 - c. Dynamic role of land rents and values
 - i. Static role - review
 - ii. Rising values
 - iii. Preemptive investments to capture resources
 - d. The intersite linkage sector and other mass systems

*Role of technological
change??
Be process, raw
material, product
input??*

*Will there be
a "dynamic"
analysis?
or is this
implied
by S.C. and ii?*

B. Macro mechanisms for full employment

1. Sources of pessimism about general equilibrium at full employment
 - a. Malthusian
 - b. Supply without enough demand: "oversaving"
 - c. Demand without enough supply: "overheating"
 - d. Structural-institutional friction
2. General full employment equilibrium: analysis in real terms
 - a. Replacement determines aggregate demand and supply
 - b. Reality behind the scenes: basic model of the economy as a store
 - i. Simple model: capital and labor
 - ii. Fuller model: capital, land and labor

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- c. How to speed real turnover and raise the flow of aggregate real supply and demand
 - i. Factor prices: the market at work
 - ii. Public policy: removing institutional bias
 - iii. The real multiplier; or leverage from attempted capital formation: a false emphasis
- d. The locus of system control: where real discretion lies
- e. Errors of analysis and policy that follow from neglecting replacements
 - i. The fiscal left
 - ii. The fiscal right
 - iii. Resolving the errors
- f. Embellishing the basic model
 - i. Capital formation
 - ii. Transit between replacement frequencies
 - iii. Export and import

*with or without
concern for residuals?
i.e., longer lasting vs
throw-away? That is,
should all
turnover
be speeded?
or land
elementary?
or land +
buildings on
land?*

3. General full employment equilibrium: spending flows linked with real flows

- a. Proximate income-creating expenditure is replacement, not consumption *for whom?*
- b. Autonomy and discretion lie with replacement, rather than consumption or net investment *Is the implication that public policy should focus on replacement??*
- c. Monetary thermostats: replacement linked with velocity rate in the quantity theory framework *??*

C. Integration of micro and macro mechanisms for housing on full employment

D. Full employment independent of "growth"

1. Population and demand
2. Capital formation
3. Demands on Nature *(?) Irreplaceable vs non-replaceable resources?*

II. Current unemployment and slow cycling of capital

A. Inflation with unemployment

1. Overload on fiscal-monetary policy
2. Counsels of despair, confessions of impotence: the new dismal science

B. Evidence of shortage of ripe goods and inadequate capital recovery

1. Shortage of ripe goods *?? I must be out-of-date!! I've missed this term.*
2. Shortfall of capital recovery for reinvestment
3. Low net saving
4. Heavy commitments of capital fund to slow recoveries

C. Threat of serious crisis with self-reinforcing feedback

1. Increasing returns to aggregate investment
 - a. Richardo, Malthus, Marx, Keynes, the unbroken tradition of misleading iron laws
 - b. Capital complements capital
 - i. Spillover and synergism
 - ii. Capital used to develop land
 - iii. Capital used to finish what other capital starts

What are the implications for your analysis of post-industrial societies? Dominance of tertiary sector??

- c. Increasing returns and potential instability from self-reinforcement
- 2. Historical precedents: waves of overcommitment and retrenchment
- 3. Current overcommitment and vulnerability
- 4. Probability of perverse policy reactions to crisis

III. Institutional biases to use: less labor, more land and capital

Introduction: Harmony of micro and macro

A. Tax policy

- 1. Forest taxation, a case study
- 2. Other growing capital
- 3. Depreciating capital — minerals? ground water "mining", etc., Texas High Plains
 - a. Mobile capital, unattached to land
 - b. Structures
 - i. Static model
 - ii. Dynamics of changing land values: locational obsolescence: ripening; preemption
- 4. Payroll taxes
- 5. Other Capital gains taxes?

B. Survey of non-tax biases

- 1. Forced land consumption (emphasis here on underusing good land, not on capture of new land)
 - a. Zoning, urban and suburban (and rural, if significant)
 - b. Farm programs
 - c. Mineral programs and industrial organization
 - d. Water law
 - e. Non-control of effluents
 - f. Cartel organization
 - g. Patentable discoveries
 - h. Administration of public lands and other natural assets
 - i. Other (quotes; bank charters)

Land banks, ACP, etc. ←

Depletion allowance
Pro-rating of oil production
Oil import quotas
Government purchase of fuel — helium
Etc.
Mineral Leasing, 1872 Act.

- j. Summary and common themes
- 2. Suppressing the cost of capital
 - a. Inflation
 - b. Subsidy by loans at low interest
 - c. Aggrandizement of management by plowback
 - d. Public works' accounting
- 3. Labor legislation
- 4. Industrial organization
- C. (Overcompensatory) territorial expansion: substituting land and capital for labor

*Fast tax write-offs
depreciation allowances
for "pollution control
equipment" - federal
and state
Grants to states, municipalities
with inherent subsidy to
industry, et al*

Introduction: Overcoming artificial scarcity of land causes artificial scarcity of capital, and pushes on limits of Nature

- 1. Inflation of intersite linkage capital
 - a. Low density, retarded renewal, leapfrog land succession result in inflated distributive networks
 - b. Linkage sector is capital-heavy
 - c. Regulatory bias
 - i. Uniform area ^{and time} pricing
 - ii. Rate base maintenance
 - iii. Territorial imperialism
 - iv. Tax aspects
 - v. Management aggrandizement
 - d. Public works

Political allocation: biases toward slow results

Logrolling

Partial funding

Avoidance of competition

Perpetuation of bureaucracy

Engineers, construction union, lawyers

Land values: immediate gratification, deferred retribution

Low-interest loans: a favored vehicle of subsidy
 Low rent on public natural resources, ditto
 Monuments for publicity value
 Imbalance of trucks and feeders
 Imbalance of large and small elements of development
 Leverage of private over public income - serving outposts

*Redirection for
 construction
 alternatives vs.
 non-structural
 measures,
 economic
 incentives*

2. Lags, imbalance, and inflated demand for complementary capital
 - a. Lags within public programs: reprise
 - b. Lag of private complements behind public outlays
 (Even though early private investment with political
 influence leads public works)
3. Inflation of military budget
4. Inflation of demands on Nature
 - a. Space
 - b. Extractive
 - c. Environment
5. The inherent heavy capital needs of marginal land
 - a. The underestimated public costs
 - b. Private costs
 - c. Spreading rent thin. Substituting capital and marginal
 land for superior land. Inherent anti-labor bias:
 inflating the capital and resource complement of labor

D. Inadequacy of territorial expansion to achieve full employment

Introduction: It works so long as we can bring limitless capital
 and land into the system.

1. Limits on capital
 - a. High capital requirements synonymous with slow recovery:
 review and reprise. Reduced employment-creating spending
 and demand for labor
 - b. Jeopardy of the capital trap
 - i. Review of risks inherent in expansion
 - ii. Summary of territorial economic ebb and flow in U. S.
 history

2. Limits of the Earth

- a. Do cheap land and raw materials complement or displace labor?
- b. Claims of other jurisdictions. *??*
(We run into political limits before natural limits)
- c. The environment
 - i. Excess transportation and pollution
 - ii. Extraction, primary processing and pollution
 - iii. Space invasion, sprawl and pollution
 - iv. Material-using bias, non-recycling, and waste-generation
 - v. Rules of capture, and encroachment on recreation, wilderness, and ecology
 - vi. Non-control of effluents
 - vii. Scenic amenities
 - viii. Inflated costs of *separation at source,* collection, disposal and control due to sprawl
 - ix. Slow capital turnover: a gain for environment?

IV. Conclusion: Full employment through full use of better land and turnover of capital *Cheers!!!!*

A. Blind alleys to avoid: diversionary issues to scout

B. Taxation

1. The property tax

- a. Increased overall role
- b. Modifying the base

2. The income tax

- a. Purging intertemporal biases
- b. Toward an economic definition of property income
- c. Modifying the base
 - i. Taxing property income without disincentive
 - ii. The payroll component

3. Excise taxes
 - a. As user charges
 - b. General
4. Pure payroll taxes
- C. Non-tax institutional drives to substitute property for labor
 1. Forced land consumption
 2. Artificially inflated use of capital
 3. Labor legislation
 4. Industrial organization
- D. Containing Territorial Expansion
 1. Tax and institutional reforms of (B) and (C) reduce centrifugal and appropriative drives
 2. Deflation of intersite linkage capital
 - a. Removing regulatory bias
 - b. Public works
 - i. Reducing overall need
 - ii. Taxing beneficiaries
 - iii. Fewer starts, faster completions
 - iv. Charging full rent and interest
 - v. Intergovernmental relations ???
 3. Synchronizing complementary investments
 4. Reducing military costs
 5. Reducing demands on Nature
 - a. Space
 - b. Extractive resources
 - c. Environment
 6. The heavy labor requirements of superior land intensively used
- E. Summary: Adequacy of Capital and Nature to employ and serve the population

What about capital
 gains taxes, interest
 income, ~~de~~ non-
 taxable income re
 depletion allowances?

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Copy 2
Outline of full employment through full use of man
and capital, by Mason Saffrey, Feb., 1971

The
Introduction: ^A Unresolved problem of unemployment

Experience of ^{the} last 3 years has strengthened or confirmed suspicion that many have entertained for longer periods, that tools of monetary and fiscal control are not equal to the loads we ask them to bear. Inflation and unemployment.

Unemployment is more severe than conventional measurement allows. Custom has staled full appreciation of how very far we are from any optimal level of employment.

Other aspects: discouraged seekers not counted; idle housewives desiring careers; protracted apprenticeship in schools; homes too far from jobs; weapons production in some part; servicemen; featherbedding, make-work rules; forced retirements; under-employment--misallocated labor; crime; rising share of population on welfare; wage levels artificially depressed by monopsony; etc.

Some tolerate 4% measured rate as minimum, but why can't most groups be as fully employed as the most fully employed, with 1% unemployment? (Married white male adults). They change jobs, too.

Collateral problems: Iron Mountain effect; sacrifice of environment for payrolls; restricted immigration (with profound change in nature of our international position, instead of receiving people we are competing for raw materials); fencing off of professions, adding to generation gap, reducing mobility, damping the confident, innovative, interloping spirit; growing anti-natalism, fear of people in general, an easy vehicle for misanthropy; and of course inflation incurred or accepted to fight unemployment.

Faced with this mountain of unemployment and derivative social ills, leading economists are offering only dismal choices, as in the days of Nassau Senior, and those within a narrow range of policy controls, those of fiscal and monetary policy (FMP).

In the early age of innocence, the bright promise of FMP (especially but not exclusively the fiscalists) was that by social control of Federal spending we could employ everyone without inflation. Hardly anyone dares promise that today. Now we are growing inured to the Phillips curve, trading off inflation for unemployment.

Quotes from Friedman, Samuelson, Okun, Heller, Burns, Wallich, McCracken, Ackley, Galbraith. Counsels of despair, confession^s of bankruptcy, dismal choices.

Some promise employment; some promise price stability (or "nonflation") but none has delivered. Already, the talk is of more unemployment traded for less inflation, with both suffered. And that is the only honest promise, in view of the record.

Some emphasize control of the quantity of money, others the aggregate Federal budget. But except for a few these are differences in emphasis, each school allowing a large role for the other in its scheme of things. Both accept the premise that the rate at which money is spent pretty much dominates real production and employment.

It is time to be disenchanted with such heavy emphasis on FMP, and the idea that control over aggregate money and spending are the sovereign keys to employment. Fiscal policy and monetary policy are necessary but not sufficient, and maybe not even the most important of the necessary conditions. 35 years of primary attention to these only policy levers has produced a cultural lag, with other matters badly neglected.

Cite Paul Douglas cross exam. of J. Aukley.

One group long disenchanted are the Dirigistes of varying degrees, who would take control over what remains of the free market and solve economic problems by returning to direct state control and policing of prices and many other key economic decisions. This is not a study of how bad life is under price policing, rationing, and so on, for there is a wide and convincing literature; this is rather a study of how we can help the market solve its problems. But the fact that many people are ready to move into controls and accept the risks and restrictions of enlarged policing, and the political determination of relative values, distribution, and allocation, and the loss of incentives under suppressed inflation, and all the rest--this fact is an index to how badly we are doing, and a reminder of the fate that is ours if we fail to meet the legitimate aspiration for employment opportunities by other methods.

It is not surprising when a committed figure--Galbraith--leads the forces. But when a life-long skeptic, Arthur Burns, now in a seat of power, calls on controls to effectuate his policies--that is a counsel of despair indeed.

Some "Structuralists" have offered another force, but it is underdeveloped, unexciting, fragmentary, and poorly integrated and reconciled with FMP. Some has been coopted by privilege and pressure groups, like the "regional development" work supported to protect dying constituencies.

One should not promise more than he can deliver. But economic analysis of market mechanisms can promise, and policy can deliver better than dismal choices. Full employment without inflation and without controls is attainable. This work purports to begin to develop the analysis and policy recommendations.

I. Market mechanisms for homing on full employment

Economists overreacted or misreacted to the fact of unemployment in the Great Depression, that formative period in economic analysis when many basic premises were imbedded in doctrine. It is the custom to assume that underemployment equilibrium is probable in a free market, so that very deliberate social control, as of aggregate investment, is needed, and that under very tense conditions of unstable equilibrium, as though the authorities were walking a high wire. Reform to achieve free markets is regarded as futile.

The Douglas-Ackley exchange.

The belief in reform futility consists in two levels: one, that the market cannot be made free; and two, that even if it could, it might not help.

Most economists have focused on unfree wage rates as the major and intractable problem. The present work proceeds from a premise that wage rates while important, have received more than their due share of attention. Others, like Douglass, have looked at industrial market power, and the anti-trust laws as a way to solve the problem. The present work gives some weight to this aspect, but stresses remedies other than the anti-trust laws.

The focus here is on other market faults, those affecting capital and land. It identifies many key variables and many policy controls over them, which may be used to reach full (more precisely "optimal") employment.

Many economists believe that price flexibility guarantees full employment within the bounds of micro theory, but not those of macro. The present work ^{seeks to unite} integrates micro and macro theory, showing that micro mechanisms also have the needed macro effects. Specifically, to anticipate, faster replacement of capital, a micro mechanism for greater employment means greater replacement demand and gross investment, a macro mechanism for full employment.

A. Micro-economic mechanisms for full employment: substituting labor for capital and land; substituting capital for land.

1. The variability of factor proportions, and sensitivity to parameters.

The assumption of fixed proportions found in most analysis, explicitly in some (Harrod, Weintraub, etc.), implicitly in others.

Great variability obtains in fact among different countries; industries; firms within same industry; ^{individual owners of housing.} Data.

A small percentage drop of wage rates draws investment and land into labor-heavy industries ^{and firms} because it gives a large percentage rise of interest and rent, while giving very little in capital-heavy and land-heavy industries. *Arithmetic illustration.*

The differential sensitivity of durable investments to interest rates--some introductory capital theory and practical examples. Durable means capital-heavy. Martin Bailey on why we cannot run out of investment opportunities.

2. Substitution of labor for capital

The need for a vertically integrated approach, because capital is produced by labor. Hazards of static approach, intuitively assumed by most, where a capital-heavy industry is one with a high capital to payroll ratio. The 'fixed' capital is actually turning over slowly, and the true-labor-input varies with speed of turnover. In a perfectly staggered, vertically integrated group of operations, the capital to payroll ratio is a correct guide to capital intensity, as will be shown. But the displacement of labor by machines in one stage of industry often represents a shift of labor to the machine-producing stage rather than a net disemployment. Example of agriculture.

The share of capital in the product is an increasing function of time. Doctrine of non-coordination of factors: labor hired by investor. Investor's function to advance "subsistence" or ripe goods in return for green ones.

Models of investments showing how share of labor in value of product is a decreasing function of the life of capital.

a. Appreciating capital. The point-input point-output (PIPO) case. The single investment model.

The staggered model

Work of Wicksell, Brems, Dorfman, Donar^m

Applications: timber, livestock, inventories, minerals, research (work of Barzel). Data from specific cases.

Denial by J. Robinson of the models, and refutation. Denials of Clark, Knight, and refutation.

Sensitivity analysis--the basic math.

Conceptual pitfalls and their solutions:

-- the definition of "life." Life as the reciprocal of frequency, where frequency is the output to capital ratio. Dorfman's "bathtub theorem."

-- the definition of capital, and some implications. The Stubblebine position. Refutation.

b. Depreciating capital

Single investment model

i. Followed over life

ii. Breakdown of cash flow at a point in time

Staggered model

Work of Brems

Mathematical necessity for consistency of principles applying to both kinds of assets, since depreciating assets are mathematically definable as sums of appreciating assets. Vickrey's proof of Haig-Simons theorem for all assets.

Ackley's denial, and refutation. The useful concept of "half-life."

Applications and data: autos; housing stock; fruit trees; alfalfa; industry in Milwaukee; machinery (Terborgh); etc.

The deceptive comparison of lives of appreciating and depreciating capital: former is relatively much longer than at first appears, so cattle and timber and minerals show low labor to output ratios.

More conceptual pitfalls. The misleading treatment of capital turnover, depreciation, depletion, and replacement in the national accounts, a professional stumbling block to clear analysis.

c. Adaptation to scarcity and glut of capital

Wicksell's model; Bzems' expansion. Shortage of capital not an absolute barrier to full employment, given the absence of structural barriers to mobility.

Neither is glut of capital a barrier to full employment.

Ratios adjust.

Martin Bailey's sink of capital.

The Luddite ^{fallacy} ~~anxiety~~. Machines produced by labor. Limits on the substitution of capital for labor. R&D affected by relative factor prices, and it can foster labor-using as well as labor saving innovations.

Aggregate increasing return to capital--refutation of Marx and Hanson.

3. Substitution of labor-and-capital for land: "intensity"

a. Classical diminishing returns - *a retreating limit on intensity*

Elasticity of production, intensity, quotients, and leverage of higher prices or lower wages or lower taxes, forces causing great intensification, ^{showing scope for intensification.} Examples from agriculture, industry. *Resolving urban land by site removal, important aspect. Increasing height of blimps.*

b. Increasing returns from intensification.

Circulation and synergism, urban and rural.

c. Use of capital to develop new land, i.e. to raise land to higher use, at several frontiers of succession.

Land and extractive resources not a limit on employment, so long as capital may employ labor to bring submarginal land into use -- or any land into higher use. ^B Marnett and Morse.

The historical record: falling terms of trade of primary products; excess capacity in primary industries. Landsberg, Fischman, and Fisher.

Environmental quality not a limit on employment, by same reasoning, so long as capital can employ labor to enhance (or avoid degrading) environment.

Slow recovery of capital used to develop marginal land. The extreme case of landfill. Ultra-extreme case of appropriative investments that don't even return interest except in acquisitive, redistributive forms. Importance of developing intensive margins in preference to extensive ones. 3d dimension (height); 4th dimension (renewal or ^{cyclical} rejecting of sites).

4. Substitution of labor for capital-and-land--the way to full employment.

Greater intensity means higher labor-and-capital to land ratio.

Shorter lives mean higher labor to capital ratio; also more frequent use of labor on land, hence higher labor to land ratio for any given capital stock. Harmony of Georgian and Wicksellian approaches to full employment--seen by Wicksell. Harmony modified by lag of site renewal behind capital recovery.

Models for appreciating and depreciating capital repeated with addition of land, single-investment and staggered.

Sensitivity analyses repeated.

Mechanism ^{of} for free market for homing on equilibrium at full or optimal employment.

The frontier trap. Developing new lands (at every margin of land-use succession) intensifies land use on new land, but substitutes capital for labor by slowing rotation of capital. Also slows rotation ^{on} and recycling of ~~removal~~ on old land. To avoid trap, intensify more, expand less. Intensify in 3d and 4th (crystallizing) dimensions.

5. What determines the rotation of capital, and renewal of land?

Role of interest rate in simple PIPO model easily and widely understood. Basically correct, but too simple for most analyses.

Define and contrast capital recovery, capital replacement, site renewal, and throughput of materials. Rotation of capital is a full cycle of investment, recovery, and replacement. Capital rotates faster than sites are renewed and materials are put through.

The share going to capital varies as an increasing function of the rotation period. The share going to land varies as an increasing function of the renewal period.

a. Appreciating capital

Faustman's solution. Review and improve.

Sensitivity to parameters. Preview: effects of different methods of taxing.

Applications to forestry, livestock, inventories.

Depletion of minerals.

Intangible capital: R&D, goodwill, education, etc.

Determinants of capital rotation are almost the same

as those of site renewal, but not quite, at the ~~terminal~~ end; and very different at the ~~vintage~~ ^{harvest} end. beginning.

b. Depreciating capital

Capital recovery leads site renewal by large factor.

Speed of capital recovery largely set at birth or vintage.

Speed of site renewal much more sensitive to parameters of later years, mainly land value. The useful concept of half-life.

Land 'ripening' factors also affect renewal period by slowing beginning of new cycle (which is same as ending of old cycle.)

Determining life. Economies of longevity vs. ^{costs of time,} (interest and rent.) Balance by maximizing present value in perpetuity.

Intellectual, religious, sentimental, and class bias towards overstating the benefits of durability. Capital recovery factor and the small benefit of spreading capital costs over more than twenty years.

Sensitivity to parameters.

Combined appreciating and depreciating capital: mineral extraction.

A special case?

c. Dynamic role of land rents and values in replacement timing.

i. Static role--review.

ii. Rising values. Effect on timing of building for land use succession, and life of buildings. The ripening question.

The tendency to consume rising land values under buildings by non-reinvestment of recovered capital.

iii. Preemptive investments to capture submarginal resources.

Non-recovery of social capital, as private capital is recovered by rise of value of captured resource.

d. The intersite linkage sector and other mass systems.

Linkage extensions have special role of adding to effective land supply. Lag of site renewal behind capital recovery raises land prices which stimulates land use succession and extension of mass systems.

Mass systems are characterized by decreasing costs. This leads to building capacity ahead of demand. Lengthens payout period.

Other factors slowing payout: capture of territory; nature of payout through enhancing land values; durability of capital fixed to right of way.

Nature of political incentives to build public works whose payout is in votes and contributions rather than sales.

a. The political value of raising land values before land is ripe for the higher use. Immediate gratification, deferred retribution.

b. Payout through taxes on capital, sales, ^{and} on payrolls. Land value hike comes first; tax returns come in later if at all.

Preview: institutional factors slowing payout.

Large subdivision, company towns, new towns, shopping centers, and other large integrated developments which pay out by capturing their own spillover benefits.

Scattered and unpredictable settlement pattern inflates capital requirements for linkage sector.

c. Lag of response to new parameters.

Speed of capital recovery is largely set at vintage. This is most obvious with depreciating capital. There is more ^{short run} latitude in harvesting appreciating capital, but there are narrow limits on this, too.

Recovery of some capital requires further investment of complementary capital. This dependency increases with durability, and is most evident with public works. This lengthens adjustment to high interest rates. Not only can they not speed the release of sunk capital, they slow it down by suppressing required complementation, if public works have been built far ahead of complements. This is one element in the possibility of a serious crisis.

Speed of adjustment declines with durability of stock.

In the short run, capital recovery is largely predetermined by previous decisions.

The recovery of land ^{for recycling} from beneath old ^{depreciated} capital may be accelerated a great deal in the short run, because of asymptotic depreciation patterns of old buildings. But the revenue ^{is} is true for appreciating capital, for land is a smaller share of total value in later years of life, *and higher land values speed up ~~land~~ recovery only a little.*

6. Summary: how the market *substitutes labor for land and capital to reach full employment.*
B. Macro-economic mechanisms for full employment

1. Sources of doubt about market mechanisms in the aggregate.

There are several strains of thought doubting the ability of free markets ^{in the aggregate} to *home* on the full employment which micro seems to promise. *Moving from micro to macro assumed to involve a fallacy of composition.*

Some ^{doubts} have already been answered by (A). Others are mutually refuting. Other answers latent in (A) need translating into the language of macro-economics.

a. Malthus. Limited earth, superfluous people. In simple forms has been rejected. Reasoning and data already given in (A). Scope for substitution of labor and capital for land. (Returning, however, as an element in more complex theories).

b. Inadequate demand to absorb supply, above underemployment equilibrium. Oversaving, underinvestment: surplus of capital.

Oversaving, coupled with dwindling outlets for investment. Falling rate of profit (Marx), or diminishing marginal efficiency of capital (Keynes). Has elements of Malthus--reaching limits of the earth, both

territorial and inventive, are causes for falling yields on capital
 (Harmon^{ns}). Has elements of Ludd--capital piles up, seeks outlets, machines
 displace labor/ (Theobald et. al.). But declining population growth also
 viewed gloomily, as reducing demand.

Although pessimistic about what a free market can achieve, this
 approach is optimistic over what social control of investment can achieve.
 Policy implications: keep interest rates low; invest public funds at low
 or even negative returns. Has elements of Henry Clay--invest in public
 works, open new frontier. Saving is redundant, little incentive needed to
 create capital, only to keep savings from being hoarded. Has elements of
 cartelism: avoid supplying ripe goods for today's glutted markets; employ
 labor to build up capacity to meet tomorrow's scarcity^(farm and reclamation policy). Has elements of
 easy money (Patman), but generally regards money supply subordinate to direct
 control of spending.

Meeting inflation with unemployment, however, this optimism fades,
 leaving the left prone to seek recourse with Galbraith in direct controls.

c. Inadequate supply to meet demand, above underemployment
 equilibrium. (Overinvestment, shortage of capital?)

This strain of thought has not been so well articulated as (b),
 the Keynesian orthodoxy taught in academe, but it often prevails in seats
 of power. It has influenced much Federal policy ^{after} since Heller. Cite definitive
 statements. The "overheating" school. Heller bespoke the optimistic side of
 Keynes: increase investment incentives, soak up unemployed by increased
 investment, achieve large net gain. This ^{bullish} version of Keynes could even be

construed as optimistic about the free market, since increasing investment incentives ^{can take} took the form of reduced disincentive taxes on new investments; *and the market is assumed extremely responsive to the touch of added spending.*

The bearish view is that such increased investment can only be a stirring up

of paper with little real effects, only inflation. This is deeper than

simply saying increased money supply is inflationary, although it has elements of tight-money thinking. It says increased incentives to invest are inflationary, creating demand without supply. It is seldom made clear whether this reflects a ^e promise that capital is too scarce; or too unadaptable; or what. (This work seeks to formulate and articulate the premises.) It

evokes memories of the theory of a fixed wages-fund limiting possible increases of output, ^{and goes with ideas that fiat and large increases in employment are unattainable (over)} The major policy implication: route to full employment is to lower wages, using direct controls if necessary; *suffering must precede fulfillment; don't hope for too much.*

Faced with inflation in spite of reduced investment, this school, too, ~~fades from optimism~~ and turns to direct controls. (Burns)

(b) and (c) may appear contradictory, but they have a common theory: the lack of market thermostats, need for Keynes' "socialization of investment," i.e. conscious intervention by government and quasi-government to regulate rate at which money is spent to employ labor. They differ on what rate is optimal, neither regarding the other as benign.

There is a common readiness to abandon free markets when faced by inflation-with-unemployment, or other crises. The issue is not intervention vs. laissez-faire, but rather who is to intervene and for whose good.

and

d. Structural institutional frictions

This strain of thought traces unemployment to stickiness, friction, lags, monopolies, cartels, uneconomic regulatory criteria, closed unions, licensure, privilege, tax bias, and so on. Individuals vary widely in the weight they give it, some believing Keynes proved that underemployment equilibrium is as likely under perfect competition as any other condition. Individuals also differ in how curable to regard the market's faults. Pessimists believe markets cannot be made free; many believe they should not, either, or that there is little good in it, and the positions merge and support each other. Free market liberals trace unfree markets to abuse of government power by dereliction or complicity, and are optimistic about what can be accomplished by reorienting policy away from interference with free markets, and where forbearance alone is not enough, toward actively fostering them.

The following sections (2 and 3) of this part (B) purport to show that the micro-economic devices for homing on full employment also have the necessary macro-economic qualities. Later parts (C and ff.) suggest that there are many feasible policy measures to take -- or cease -- that can materially increase employment, once the importance of removing bias against replacement be recognized. The writer is optimistic about the benefits and the feasibility of removing structural barriers to the market.

To capsulize the argument, the preview follows. The macro device for increasing labor to capital ratio is faster rotation of capital.

This counters two pessimistic macro ideas. One is that final demand is inadequate to carry away increased output. But turnover increases gross investment, creating added income. Capital owners invest to replace capital in anticipation of replacement need, creating the money income to buy what they sell. The other is the reverse, the fear of inadequate flow of ripe goods to balance increased incomes from gross investment. Increased turnover adds to the flow of supply as well as demand.

A micro device for increasing labor to land ratio is also faster rotation of capital, and the same arguments hold. A second micro device is increasing the capital to land ratio. This reduces linkage capital needs and so speeds overall capital rotation, because linkage capital is very durable. It may slow some specific rotation^s on private land, but the extra capital put on better land is pulled from marginal land, where rotation speed is at its lowest.

Having shown that market mechanisms do home on full employment, (B), the major aim of the work is then to identify faults that can be righted to let the market work optimally.

2. Market mechanisms for full employment equilibrium: real terms analysis

a. The prime micro device for full employment is faster ^{replace -}employment. A theme of macro is that there are forces not contemplated in micro which may keep aggregate demand too small to buy the output necessary for full employment. But faster replacement has a macro dimension: it means higher gross investment, and so supplies greater income-creating spending.

We will pursue this line of reasoning to show that micro devices for ^mhousing on full employment also have the necessary macro qualities.

~~Another theme of macro, we have seen, is school (c), the anti-overheaters, who~~

It is not the spending alone that is healthy. Spending alone is cheap, and may do no good. Faith has turned to doubt, and doubt to disbelief that spending alone can do more than raise prices and help finance government, even in the U.S., Latin American, Chinese and other experiences with deficit finance as a way of life have shown what can occur in nations that overload this one device. The anti-overheating school often interprets any increased spending in the U.S. this way, even that due to increased incentives to invest.

But they should not so interpret replacement investment. The ripe goods being replaced are also being sold: the supply balances the replacement demand. Faster replacement simply means supply and demand balance at a higher level.

The fact that greater aggregate investment is meaningful only when accompanied by greater volume of flow of real goods tell us there is a real macro-economics, one that can be analyzed in terms of a barter economy as though money were only a veil. Macro or "new economics" has been contrasted to classical ^{economics} analysis as analysis in which money is an active causative agent and not merely a neutral and passive medium of exchange. Inadequate aggregate demand, the original macro problem, is perceived as a monetary problem caused by oversaving and a bottomless

sink, or liquidity trap, into which saved money may flow without pushing investment out any outlet. This was monetary -- it could not happen in a barter economy, which is why classical economists had overlooked it.

But there is a real macro. Aggregate demand could fall short of full employment in a barter economy simply because of slow replacement, where the real aggregate demand for labor is the flow of ripe goods. A given capital can generate larger or smaller flows of final goods and employment demand simply by rotating faster or slower. The cycle of sale and replacement is a pacer so determinate of aggregate supply and demand that a basic macro-economics should begin there.

The value of looking at a barter economy is to gain insight into the things that move behind the symbols, the substance behind the shadow, thus to see if the symbolic language of our times has veiled anything important. A precondition of Keynesian optimism, latent but not explicit in its language, is a real capital stock highly responsive to the touch of spending. There is a supply of surplus goods ready to meet increased spending, ripe yet waiting for the flow of money. The goods when sold are automatically replaced, so that consumption spending creates income. The possibility of disinvestment or non-replacement is formally allowed, although not stressed and generally submerged. The possibility that the capital stock is insensitive to spending is not considered at all, nor is the possibility that replacement-investment (R) may be primarily determined by factors other than spending.

A precondition of conservative pessimism is that R is refractory not only to spending but to almost any thinkable policy.

To evaluate these macro positions we now analyze the relation of R to aggregate supply and demand in a barter economy.

b. The storehouse model

Picture the world's capital as a fund of goods flowing through a storehouse. It is only a detail that some capital appreciates and other depreciates en route.

The storekeeper grubstakes the hired factors of production, by trading them ripe goods for their services which produce green goods.

i. Simple model -- capital hires labor

The major point can best be seen in a simple model^{or} word-picture where capital hires labor. Other details are deferred to model ii. Labor brings green goods to the receiving dock and takes ripe goods to consume from the delivery dock. Labor's share is its discounted marginal product. The storekeeper consumes the excess --- Böhm-Bawerk's "agio" --- which is his share. Goods in process are perfectly staggered, so his share is the same whether we measure it as current accrual of green value or his share of ripe value. There are no direct services -- all labor must pass through the cycle of transformation into green capital and recovery or consumption or ripe capital. There is no current saving by anyone -- labor converts to new capital only the green equivalent of the ripe goods it consumes. It is only a detail -- at this point -- that much labor is used also in the delivery of ripe goods to consumers. (109)

The role of the storekeeper -- the investor of capital -- is to advance ripe consumer goods to labor. This advance of ripe goods is the aggregate demand for labor. The advance pays labor to replace what is currently consumed. The storekeeper's share rewards capital for having carried goods over time.

Aggregate income-creating expenditure is the sale of ripe goods. The supply of ripe goods is the demand for labor. This answers to "Consumption" in common macro parlance, but it is the flow of ripe goods and their replacement that is the essence of demand, not the flow of money.

Consumption is limited to the flow of ripe goods. No mere flow of money could increase this, for it is the fund of real capital times its turnover rate. Labor cannot directly control this -- not by demanding more ripe goods, and not by offering to work more. Indirectly such demands by labor will speed up turnover, but only by making the storekeeper want to in his own interest. Control of the system is in the storekeeper's hands.

The flow of ripe goods to consume balances the income with which labor and capital buy them, because they are the same -- the flow of ripe goods buys an equivalent amount of factor services. Replacement is income.

Unemployment of labor results from a shortage of ripe goods, not a surplus as in much orthodox thought. If there are ~~not~~ enough "jobs" to go around, it is because there are too few ripe goods to go around. They have to be rationed, and unemployment is a way of rationing limited goods. If there is not enough "consumption" to employ labor, it is because there is too little to consume and replace. The demand for labor is the supply of ripe goods.

As to saving (hitherto assumed zero), real saving would help employ men, not hurt. If men would work for deferred claim^s on their green products, rather than ripe goods, they could be employed. Thus *real* saving does not reduce demand for labor below consumption, but raises it above consumption.

In this real world of barter, then, unemployment results not from any liquidity trap, but from a real capital trap. That is if the storekeeper sinks his limited capital stock in ^ofirms that ripen too slowly to feed all the troops, there will be unemployment, because the flow of ripe goods will fall short.

For full ^{e o}employment, the storekeeper ~~dis~~plays his capital so he can always meet the national payroll. (113) How does one meet a payroll? One schedules maturities so goods ripen and he recovers capital at a rate equal to payroll, before capital is exhausted. On a going concern basis, that means turnover must not fall below ^{the} payroll ^{ratio.} $\div$ capital. For example, assume settlements are monthly. If capital equals 12 monthly payrolls, the storekeeper can wait 12 months before the first cohort of green goods ripens for sale. Turnover is $1/12$ per month, or once per year. It is only a detail that labor advances work on the average two weeks before payday.

If the storekeeper falls into the capital trap, his capital ripens in over 12 months and he cannot meet the 13th payroll. If this were to happen abruptly and extremely, he could not meet any of it, but that never happens in the aggregate in fact, because there are many storekeepers and there is a great deal of play in the system. But he can fail to meet part of the 13th payroll. Then some go begging, and this can become (and has become) chronic.

Several analogies and illustrations are submitted. (to be added)

To cure unemployment, the storekeeper need only increase his volume, which he does by speeding the turnover of capital. This increases both the supply of ripe goods and the demand.

Some worry that increasing investment may create demand without supply. This model shows that an increase of investment from the source here analyzed -- replacement -- supplies ripe goods simultaneously with demand.

Some worry that increasing sales may create supply without demand. This model shows increased supply of ripe goods brings on demand by putting the unemployed to work. As to saving and the liquidity trap, a barter economy does not rule them out. Saving occurs when labor takes payment in claim_Λ on green goods in lieu of consuming ripe goods. Since ripe goods are the bottleneck, saving does not retard but hastens the transit to full employment.

ii. Complete model.

A more complete model does not change any findings of the simple model, but fills in undefined areas and adds realism.

Land and green capital are hired factors, like labor. They apply their inputs of service flow to goods over lifespan. Their owners receive incomes steadily as the inputs are supplied and the value increments are packed into green capital as it ripens. The incomes are paid by investors who advance ripe goods in return for ownership of the accruing value of maturing capital.

It is only a detail that the investor advancing ripe goods may be the same person as the owner of land and/or green capital. The functions are different. It is easy to assume that holding goods as they ripen entails net capital formation -- that the owner automatically ploughs back his income from value accrued into ownership of the ripening capital -- and then perchance blows it all in a grand spree after harvest. That is inconsistent with the behavior of property owners, who tend to consume at constant annual rates, even as other men. It is done by staggering maturities, borrowing on collateral, pooling, and other devices.

The special role of ripe capital has found expression in the doctrine of non-coordination of factors. In this doctrine, hired factors are paid their discounted marginal products by investors. Investors who advance ripe goods, and carry green goods to maturity, are the non-coordinate factor.

Earl Rolph's criticism of the doctrine. Refutation of Rolph.

It is more than a detail that labor inputs are bunched at vintage and harvest, while the inputs of land and green capital span the years in between. Shorter cycles mean a higher share of value-added comes from labor; and labor is needed more often. Labor applied at harvest turns into ripe goods faster than any other labor. Shortening cycles helps employ labor not just by increasing demand for labor to begin new cycles. It takes labor to end old cycles. Final stages of production are the greatest use of labor.

This holds true for depreciating capital, too. Here, a shorter cycle means higher capital recovery each year from each dollar of capital, and this requires more service flow. Service flow is the delivery of capital to consumers. Labor needs vary with gross service flow, as a generalization.

Examples; data.

Cycle-terminating labor is so close to consumers the value-added is mostly labor, like pure services. Unlike pure services, it depends on the flow of capital.

The meaning of 'services' in current professional parlance is quite removed from a pure economic definition, and generalizations often made from available data are irrelevant and misleading.

Wicksell, who created our simple model, saw the need to expand it to treat land as a hired input. He never capsulized his insights and so most economists associate his name with his simple Austrian model. But he preferred our model ii.

The economy consists of several stores, not just one. Capital flows through them at different rates. Rates of turnover fall as we move from small business to big business to housing to government. Housing for the rich turns slower than for the middling: And so on.