CHARACTERISTICS OF MACROECONOMICS AS A FIELD OF STUDY: A SURVEY

Notes by M. Gaffney

CONTENTS

1. Aggregation

Macro is a study of what determines and limits aggregate employment and output in all industries, stages, and sectors of an economy taken together, when no market is limited by an assumed fixity of demand generated in other industries, stages, or sectors. Macro is a search for chokes that limit aggregate employment and output after removing fallacies of composition.

Macro is not the only comprehensive system-wide analysis: "general equilibrium" (GE) micro is that, too. Macro differs from GE by focusing on aggregates rather than allocation. Thus in GE a condition of universal monopoly is not considered very harmful so long as it be reasonably uniform. All monopolies reduce output and employment, labor gets lower wages and pays higher prices, but all remain fully employed and ideally allocated at a lower real wage rate. Who cares if they're being ripped off?[1]

In macro, reduced demand for labor may result in unemployment, not just lower wage rates. In the hands of its early advocates, macro was also suffused with a presumption that a higher share of the product for workers was more just. That distributive presumption was accepted without much argument during and just after the Long Slump, 1930-1941.

"Distribution theory" also deals with the whole economy. It asks how the pie is divided: a, among different factors of production (functional distribution); b, among persons (personal distribution)[2]. 19th century classical economics centered on distribution; 20th century neo-classical economics neglects the topic. Indeed, neo-classical economics was developed in large part for the express purpose of turning attention away from the distribution of wealth and income, focusing rather on "the allocation of given resources among competing ends."

This did not happen by chance. Classical distribution theory had put the finger on unearned wealth and income as needless drains on the incomes of productive people. Beneficiaries of unearned wealth and income supported the neo-classical innovations in self-defense. In their view it is "politically correct" to increase aggregate income, because "a rising tide lifts all boats." It is politically incorrect to redistribute unearned income[3] because that involves interpersonal comparisons, which are allegedly impossible to make. Only "win-win" ("Pareto-superior") redistributions are acceptable.

That philosophy should be double-edged, of course, and rule out redistributions in favor of unearned income when the ruling powers, fashions, and passions turn that way. However, here the argument is that most unearned income is saved, not consumed; saving creates capital; capital raises productivity for everyone. The argument is leaky, but it is believed, and that suffices.

Macro, developed in the Long Slump of the 1930s, rehabilitated distribution, but only in limited ways. It never challenged the neo-classical motif that the main goal of life is to produce more, regardless of who gets it and what happens to the environment. Keynes did allege that higher wage rates cause more consumption, which, through the multiplier process, raises aggregate output and income. Thus he justified wage earners as consumers, rather than as producers: a weak moral and functional justification, except in extraordinary circumstances, for

---

[1]See the works of Earl Rolph, I.M.D. Little, and Ragnar Frisch for some of those who seem not to care, or even to prefer this condition.

[2]There are also people studying distribution among regions, races, religions, age cohorts, the sexes, occupations, and you name it.

[3]With some, it is vulgar even to mention it.

paying them much at all! However, for many years it was the liberally correct belief, and sufficed to carry the day.

In a more subtle, nearly subliminal way, Keynes also distinguished between land rent and the return on capital. In Keynes, the inducement to invest is the sparkplug of the economic motor, and this inducement is the "marginal efficiency of capital"—today, the "Marginal Rate of Return after Taxes" (MRORAT).

Using neo-classical theory, this *marginal* rate of return to capital is the pure return to capital, *ex*cluding land rents. Thus, Keynes was used in the 1960s by JFK and his chief economist, Walter Heller, to justify the Investment Tax Credit, and accelerated depreciation, both of which raised MRORAT while allowing full taxation of land rents.

2. Unemployment

Macro does not assume full employment, but asks what determines if resources are involuntarily unemployed, either chronically or episodically. How can there be a shortage of work when human wants go unsatisfied? This elementary riddle is at the heart of macroeconomic inquiry.

3. Fixed land; variable labor and capital

Land in the aggregate is constant,[4] while population normally grows and capital is created or destroyed. In open economies, labor and capital also grow or shrink by migration. Macroeconomics deals differently with land than with capital. The problem with land is overcoming its natural scarcity by intensification of use. The problem with capital is first creating it by work, saving, and investing. Second is deploying it, often to substitute for scarce land. Third is conserving it by avoiding *dis*saving. Fourth is regulating its rate of turnover (a matter I emphasize heavily).

Being supplied freely by nature, land has no cost of production. Being fixed in the aggregate, land has no "opportunity cost" in the aggregate, even though each parcel has an individual opportunity cost, i.e., some other use.[5] These qualities distinguish land from humans-at-work.

---

[4]Land is fixed in area. Its productiveness is normally on the rise due to synergistic spillovers and public works and cheaper transportation; and its exhaustible elements are progressively being depleted. A "society" may also migrate and spread over more lands, or different lands, but it is people and capital that move; the mountain does not come to Mohammed. Territorial expansion is generally associated with great macroeconomic cycles of ebb and flow, boom and bust.

For expanded exposition of this matter see M. Gaffney, "Land as a Distinctive Factor of Production," an annotated listing of twenty-six distinctive qualities that distinguish land from capital. An older, published treatment is in the same writer's "Land and Rent in Welfare Economics," in Marion Clawson et al. (eds.), *Land Economics Research*, Washington: Resources for the Future, 1960.

[5]Wilderness reservations are a "use," so don't think land in the aggregate has the opportunity cost of being

Work is a human action and involves a sacrifice of leisure and often health, lifespan, locational choice, preferred vocations, etc. The worker him/herself in turn is produced by the work and sacrifice of parents, complete with education and medical costs; maintained in service by much of what is called "consumption"; and wearing out all too soon.

Capital also differs from land in being produced. Capital also has to be conserved, by being spared from consumption. Its opportunity cost is the value of the ever-present alternative of consumption-without-replacement. That is always a temptation, and quite normal behavior for retired people.

Capital also differs from land in wearing out and requiring replacement. "Capital is kept in existence from age to age not by preservation but by continual reproduction" —John Stuart Mill. The rate at which capital is so reproduced, called "turnover," is a key macro variable.[6]

Capital also differs from land in being protean,[7] that is, capable of assuming any variety of forms. Protean is stronger than versatile. Some land is fairly versatile, but it is always the same land in the same place. Capital, on the other hand, may change form and location with each turnover.

4. Distribution of wealth and income

a. Functional distribution. Macro deals with these questions:

-- Can real wage rates change (up or down) by changing factor shares? Or is it always just an empty "wage-price spiral," dog chasing tail? There are those like Keynes who say wage rates cannot fall, because lower money wage rates would simply mean lower aggregate demand, lower prices, and the same real wage rates. Others use the same line, the Fallacy of Fixed Shares, to say wages cannot rise, but only cause inflation. With such reasoning they rule out of court any consideration of changing factor shares.

The effect of this fallacy is also to rule out of macro any consideration of changing factor proportions. In this kind of macro, the use of all factors must rise and fall together in lockstep.

---

wilderness by going "out of use."

[6]J.B. Clark, father of "neo-classical" economics, virtually destroyed macroeconomics from 1900 to 1936 as a byproduct of his successful effort to obscure this distinction and make capital and land seem the same. The patrons of the profession were contented with an emasculated discipline so long as it did not rock any boats, rattle any cages, or challenge any privileges of the establishment. The collapse of 1929 rocked, rattled, and challenged, however. Keynes had a clear field, for better or worse, to reintroduce macro into economics.

[7]"Protean" is from Proteus, son of Neptune in Greek mythology. Proteus was capable of changing his form and appearance at will. In the Greek legend, he wrestles with the mighty Odysseus, and avoids losing by assuming one guise after another.

The only way to combat unemployment is to use more land and capital. The option is foreclosed of using more labor with the same land and capital.

Most writing and teaching in macro is hopelessly impoverished by this Fallacy of Fixed Shares. It rules out of macro most of the obvious solutions to the problems it should be addressing. The chances are you have never seen or heard the question raised of changing shares or factor proportions. By introducing this element we relieve most of the frustration and futility that has stifled modern macro policy, and open avenues of workable solutions to "intractable" problems.

-- What is "productivity," and how does it affect real wage rates?

-- Do all income payments serve to evoke and reward functional effort and thus to increase output, employment, and capital formation? Or are some payments unearned and nonfunctional? Since land is in fixed aggregate supply, payments to buy or rent land are macroeconomically nonfunctional, and a drain on the incentive system (whatever micro function they serve). When they rise too high (i.e., higher than justified by the marginal productivity of land), trouble is bound to result.

-- Can U.S. wage rates be sustained above world levels based on higher marginal productivities of work caused by larger per capita complements of land and capital?

-- On the demand side, do higher wages mean more consumption spending? Or are they offset by correspondingly reduced property incomes? Does lower property income mean less saving; does that mean less capital formation; and would that be good or bad for output and employment?

b. Personal

Why is there poverty amid plenty; why are some left out?

Why are frequency distributions of wealth and income so skewed and abnormal, unlike other comparative measures of human achievement and ability?

c. Business

How does concentration of business wealth affect factor proportions, employment opportunities, and output? Is "market structure" a barrier to full employment; is anti-trust policy a useful macro policy in support of full employment?

The tendency among economists has been to sweep these questions into a separate bin that macroeconomists call "structural questions," and the people inside the bin call Industrial Organization, and/or Government Regulation of Business. This frees macroeconomists to deal only with "aggregates," abstract and sanitary. This compartmentalization of thought deeply impoverishes what is conventionally called macro today. The goal in these notes is to integrate the questions.

5. Vertically integrated system view

All sciences progress beyond fact-gathering and particular cause-and-effect relations in simple cases to seeing connectedness in whole systems, governed by law-like relationships. Such law-like relationships are of two kinds: either of coexistence or of succession. The former is static; the latter is dynamic and evolutionary.

Both are essential; neither excludes or dominates the other. Micro studies the former, the static relations of coexistence; macro the latter, the dynamic relations of succession and evolution, where economic events are connected in series rather than in parallel. Life is a cavalcade, like a parade or a drama, with events in sequence.

a. Work and capital (W & K) combine in sequence

In micro, because it is virtually timeless, K can be and is treated a lot like land, T (for *Terra*). The relationship between W and K studied by macro is that W produces K, and is in exchange sustained by existing K (and to a lesser extent by newly saved K), while waiting for the new K to be consumable. K once in existence is operated and maintained by other W, but in macro that other W is linked with the other new K which it, in turn, produces. Thus the macro conspectus embraces all relations of all K with all W, but in series rather than in parallel.

Since much K lasts longer than it takes to produce, the application of labor is periodic. Work must somehow be evened out by moving labor from project to project. Meeting the payroll, too, must be evened out by scheduling the recovery of cash from capital to achieve even flows at a level sufficient to employ the workforce. The corresponding delivery of ripe goods and services to consumers must also be evened out, to supply everyone adequately, putting goods on the shelves for workers to spend their payrolls on.[8] The twin problems of "meeting the payroll" and

[8]This is where the Soviet system is failing so badly.

meeting demand are met by scheduling maturities. This is an important truth for whole economies as well as for individual firms.

Since scheduling maturities requires accurate forecasting and complex systems analysis, it is the most likely thing that can go awry. Even in the imaginary "rational" world of abstract theorists, no one could be *omniscient* about forecasting a complex future. Omniscience is much more than rationality, it is a God-like quality. It is misleading to impute it to mankind, people like those you and I actually know and deal with.[9]

Actually, even the "rational" world dreamed up by Platonic theorists is only wishful and imaginary. The crazy real world is more interesting and frightening. It is filled with fads, crazes, stampedes, mass delusions, warriors, swindlers, liars, paranoids, power trippers, scams—the list is endless. Happily, it is also brightened by loyalty, faith, charity, hope, love, devotion, and duty. Remember, however, half the people in this real world are below the median intelligence, and the median is not very high. Many are barely functional. Ten percent or so spend some time in mental institutions. It is a wonder when things turn out well, and often they don't.

In payment, workers receive "advances" of preexisting capital. These are called advances because they are in cash or consumable goods at a time when the capital being currently produced is not yet ripe for consumption. Besides advances, these payments are variously called "subsistence," a classical term used at a time when most workers were paid in chits they used at the company store; or "investing," money advanced just as the chits used to be, but redeemable at any store; or "stakes" or "grubstakes" in western America. "Front money" in modern business slang is like "advances," but usually referring only to equity money.

"Wage goods" is a term for the market basket of ripe or consumable goods typically bought by median workers. A monetary investing is validated only by availability of wage goods at an expected price level. (The money without the goods to back it might be called "improper advances.")

The usual term today is "investing." Investing generally carries the initiative in the system and gets special attention in macro as a result. But it takes two to tango, and in business often more than two, because sequential relations form a whole conga line. A major preoccupation of macro is the complex of factors determining the flow of investing.

Investings are flows of capital-in-motion, in a process of continual use-and-replacement, like metabolism. (Net new investing is capital-in-creation; gross investing less net investing is capital

[9] Today's fashion is to finesse this problem by assuming investors have "rational expectations." Basically this amounts to the analyst's accepting and validating whatever is in the individual investor's mind by defining it as "rational," denying the right of any outside observer to judge it otherwise. This amounts to declaring each investor omniscient. It serves the social function of declaring the behavior of property owners to be sacred, above outside criticism and judgment.

turning over.) Again, "Capital is kept in existence from age to age not by preservation but by continual reproduction" —J.S. Mill. Remember those words.

Time elapses between investing by the capitalist-employer and recovery of his capital through sales. Reinvesting waits on recovery (since "he who spends what isn't his'n, must make it up or go to prison"). So the schedule of planned recovery (aka the term structure of investment) affects the flow of reinvesting to employ workers. Recovery/capital = the flow/fund ratio, a critical variable.

To hire more workers with the same capital, simply turn it over faster, raising the flow/fund ratio. In the extreme this may mean shifting from a steel economy to a bamboo economy. I do not recommend that, except where capital is very short. Given that premise, however, bamboo is the way to go to survive. It is a harder life, but it works.

Note that there is both a demand side and a supply side to reinvesting. Cash recovered from sales is reinvested in sync with the sales themselves, so that wage goods are made available to validate the investing advances from the worker's viewpoint; and incomes are generated to buy the wage goods, from the seller's viewpoint.

b. Land (G, from ground) joins work (W) in producing capital (K) originally. Like W, landowners have to be paid up front. Often the G stays with the K over a long life (as with construction of housing, stores, and factories), so the G must be bought outright. This adds to the investment base and lowers the return on investing. Sometimes the land is leased. The rent reduces cash flow from investings.[10]

c. Buying and selling G are offsetting transactions, with no net income-creating expenditure or production involved (except for brokerage commissions).

d. Appreciation of G is income (regardless of realization by sale), although not so counted in the national income accounts, which are thereby badly flawed.

e. Money changes hands over time. The lapse of time between getting and spending reduces the function of money as a medium of exchange. The turnover of money, called velocity, is a measure of its effectiveness in exchanges. Velocity is the flow/fund ratio of money. Velocity is quite variable.

---

[10] The Austrian economists who originally worked this out left G out of their models. Knut Wicksell, the "Swedish Austrian," put it into his models, which are superior. An earlier German forester, Faustmann, had done the same thing, but his work has only recently been exhumed.

Money, once created, has a life of its own independent of its original use. So the velocity of money is unrelated to the turnover of capital. This limits the potency of mere spending as a device to increase real income.

f. Normalized models (aka staggered or going-concern models) let us view sequential events as simultaneous, by stacking staggered series and summing sections of the stacks. (Here the metaphor of "vertical integration" runs counter to the graphics. What are normally called vertical or sequential relations are normally shown graphically as horizontal, with time on the abscissa. On such a graph the vertical stacks represent one period of time. We regret that the conventions here are mutually clashing, but we are doing our best in a world we never made. Rather than change all the conventions, we ask you to make this mental adjustment.)

The best model of this kind is found in Wicksell, *Lecture on Political Economy*, pp. 172-78, on reserve, applied to grape juice and wine. Another is in Wonnacott, pp. 81-85, applied to converting the Keynesian multiplier from a horizontal row to an instantaneous vertical stack (these are traditionally called the horizontal and vertical multipliers). Another is in George Pinches, *Fundamentals of Financial Management*, selection on reserve, applied to inventories. William Baumol, *Operations Analysis and Economic Theory*, originated this model, and we will call it "The Baumol Model." It is less direct than Wicksell's grape juice model, but perhaps easier to follow on a graph. In this course we will use Baumol's Model.

In these models, the lapse of time is represented by the fund of capital. The longer the period of investment of capital, the larger inventory is required. And the cost of time is represented by interest on that stack of capital. It does not disappear, just because normalization has contrived that ripe products come out at the same time that raw inputs are going in. To think that it does is known as the "fallacy of the disappearing inventory."

I am sure that the fallacy and its refutation are obvious to those as astute as yourselves, but it is amazing how many economists of some repute have staggered into that fallacy: J.B. Clark, Joseph Schumpeter, and many foresters trying to wish away the cost of interest in forestry, for example. It is a measure of Wicksell's greatness that he saw through this matter so clearly, while others fumbled and stumbled.

Capital occupies land during its life, so in better models the stack is composed both of capital and land. Thus in a normalized forest where one acre of trees is planted and another acre cut each year, if the rotation period is n years, n acres are required, as well as the capital in the trees on n acres.

A more subtle fallacy was committed by Friedrich and Vera Lutz, who normalized the rotation and stacked the capital but let the land disappear. We will not be studying that in this course, but you should know that many people have had profound difficulties reconciling relations of coexistence with relations of succession, and these inventory models, properly understood, accomplish that very neatly, and are worth your careful study.

g. Macro deals with economic "glitches." An ideal economy is glitchless, but in macro, glitches can occur. They occur because of bad scheduling, with maturities out of sync with needs. Irreversible errors are possible. According to Omar Ibn Al-Halif, "Four things come not back: the spoken word; the sped arrow; time past; the neglected opportunity." He should have added a fifth: the misinvested dollar.

The great thing about the market economy with flexible prices is that it is so full of self-correcting mechanisms, or thermostats. A thermostat is an example of "negative feedback," which is equilibrating and stabilizing and makes the system home in on optimality.

But economic history indicates there are also traps for the unwary. There can be lags in adjustment after mistakes. More serious is "perversity." Perversity is worse than irreversibility. Perversity means a glitch is self-aggravating. It is like the sufferer who scratches because he itches, and itches because he scratches. Such a condition is called "positive feedback," a dangerous cycle indeed. "Vicious spiral" is another name.

One such perversity is the liquidity crisis syndrome, when there is a great crush to convert goods into dollars. One individual can convert any asset, even the "hardest" (furthest removed from being consumable), into dollars by selling to another investor. But all sellers together can do this only by turning the hard capital into "soft" (consumable) goods (e.g., turning textile plants into salable clothing).

However, it takes the working capital from the sale of soft goods to operate the plants, and thus recover the capital stored up in them. Lacking that, the capital in the plants is frozen in. A rise of interest rates, which should call forth more investable funds, instead freezes the system and calls forth less.[11]

A related perversity is the Ponzi syndrome (Ponzi was a classic swindler who borrowed to pay interest on previous debt). Those who are stuck with delayed construction schedules, and have to borrow more to pay interest on earlier borrowings, get on this treadmill. The higher interest rates go, the more they have to borrow. Some Latin American debtors today are in this bind, as described by David Felix's paper on the Baring Crisis, etc.

Thus macro deals with boom and bust, crises and collapses, and of course how to avoid them.

6. Extended sequential interdependencies

[11]The loss of capital is immediately signaled by a drop in the market value of the plants. This drop is not just a "paper" loss; it is real negative capital formation. From any given cash flow, a higher share will go to cover interest, leaving less for capital recovery. Besides, cash flows will be lower.

This follows from macro's being both aggregated and vertically integrated. Macro follows chains of reactions through the whole system. It treats economic adjustments as a cavalcade of events through time, rather than a grand system of instantaneous mutual adjustments.

a. What can the group not do that an individual can?

-- Invest in excess of cash flow by borrowing;

-- Reduce cash balances by spending more than is received;

-- Increase inventories by investing more (without raising prices).

b. Macro sees the interdependencies in long sequences of flows. One failure to pay, for example, may stop payments through several succeeding stages, and have multiple effects, like cars piling up behind a freeway accident. Likewise one failure to deliver feedstock may hold up a chain of succeeding operations.

c. There are two sides to every transaction. A's spending is B's income. The use of money turns every single barter transaction into two separate transactions. Macroeconomists dispute still over whether money is just a veil over barter or a separate agency with its own effects.

Completing the barter is known as the circular flow of money, where investing returns to the spender as sales; and labor services return to the workers and property owners as goods and services to consume. One way or another these flows meet and balance. The aim of macro policy is to balance them at high levels.

7. Dynamics of capital in motion or flow

a. Capital formation by saving/investing and destruction by dissaving/disinvesting.

b. Capital turnover. How much capital is "set free" each year by ripening and liquidation? The term structure of capital—how much is scheduled to ripen and be recovered in various future years? How stretched out is the schedule?

c. How interest rates, rising or falling, serve to equate the supply and demand of investable funds by changing turnover rates. Or do they? This is a point of controversy.

d. Timing of replacement. This is different from capital recovery, because capital is recovered gradually over the life of machines, etc., but scrapping and replacing the carcass is a discontinuous event.

e. Obsolescence and adaptability. How fast is new technology embodied in the operating capital stock of a nation? How fast can capital change its valence for land and labor, faced with needs to change factor proportions?

f. Migration, and new combinations with new lands in waves of territorial expansion.

g. Valence of capital for land and labor, over time.

h. Determination of capital flows by interaction of the inducement to invest (demand for investable funds) and the supply of such funds.

i. Irreversible traps for capital.

8. Money, credit, and banking[12]

a. Lending and debt creation

b. Money

1. Definition and functions

[12] See separate sheaf of notes, "Money, Credit, and Crisis."

2. Determination of quantity

-- the process of monetization of collateral

-- what can and should be monetized

-- constraints on quantity: required reserves, supply of such reserves, capital of banks, quantity of eligible collateral

3. How much is needed?

4. History of money

5. Current and future status. Dangerous condition of our financial institutions, with historical parallels.

c. Velocity of money

1. How the urge to adjust the stock adjusts the velocity instead. How this is another way of perceiving the Keynesian multiplier process.

2. Forces affecting velocity

3. Recent values of V, and trends

4. Effect of federal deficits on V. How much crowding out?

d. Equation of exchange

1. M, V, and spending

2. Reconciliation of Keynesian model with Equation of Exchange—a matter of translation. Systemic integration of the equation: role of MV in determining real national income. Overloading fiscal and monetary policy leads to inflation.

9. Territorial expansion[13]

Dynamics of investing in territorial expansion: of nations; of industries; of cities. Territorial expansion was the pre-Keynesian full employment policy, and has now slightly modified its character from one of land settlement to one of mercantilism (aka imperialism). With their penchant for pigeonholing important matters out of sight, many macroeconomists now consign all this to the fields of international economics and economic development.

We will treat it under the heads of capital migration, fragility of banking institutions, and the effects of military spending on federal finance.

10. Forecasting

a. Short run:

1. Business sales and supplies and interest rates

2. Tax revenues

b. Long run. "Futurology" or "eschatology," which mean "what is all this leading to," cumulatively?

1. Resource exhaustion. There is lots of eschatology in Marx, but no resource exhaustion; ditto for Keynes. Neo-Malthusians have rebelled at this. What happens to increased population with dwindling resources?

[13] Separate sheaf to be distributed on territorial expansion.

2. Cumulative capital formation. They used to worry about how we could consume all the products of the capital formed by saving and investing. Now they worry if we will have enough. Some folks are born to worry about something.

3. More leisure? Less?

4. Distribution of wealth and income as population pressure leads to higher and higher land rents and values, class divisions, concentration of economic and political power. A class society? Class warfare? Large-scale entitlements? Bread and circuses? Decline and fall of American values and economy and society? A new harmonious synthesis?

11. Policy packages

Macro is generally the basis for political policy packages at the national level. As a science it has suffered and suffers from the association, but its relevance to current affairs is enhanced. To understand the science as such you need to cut through the politics; but to understand why half-scientific doctrines have evolved as they have, you do need to understand the political alliances that produced them.

12. Peace Dividends and their Consequences

Most of the worst boom/bust cycles in history have followed great peace treaties. Public policy has rarely been able to cope with ease and prosperity as well as with hardship and common enemies. This is one reason the race keeps going back to war.

Macro policy needs to face up to this historical relationship and cope with it successfully. The upcoming peace dividend resulting from ending the Cold War (and assuming it is not lost on the Persian Gulf) presents a wonderful opportunity to improve everyone's lot. History suggests it is more likely to be blown away in class warfare, divisiveness, competitive overconsumption, and depression.

There is little precedent for such studies. They are up to you and me. We had better start now.