Reflections of the Quantity Theory:

Pigou 1917 and Pareto 1921-22

Michael McLure

University of Western Australia
and Robinson College, Cambridge

A.C. Pigou

V. Pareto

Scope of the Presentation

1) Context

2) Pigou's formalisation of the Quantity Theory

3) Pareto's formalisation of the Quantity Theory

4) Pigou & Pareto: concerns with the QT

5) Pigou & Pareto: difference in rhetoric

6) Conclusion

1) Context

Vilfredo Pareto:

- welfare economist; and

- Lausanne school

A. C. Pigou:

- welfare economist; and

- Cambridge school

Context

A) General Welfare

- Demand: ophelimity; 3rd parties; and externalities

- Difference in scope of economics

- Pigou's first criterion: material dimension.

- Pigou's second criterion: improved distribution
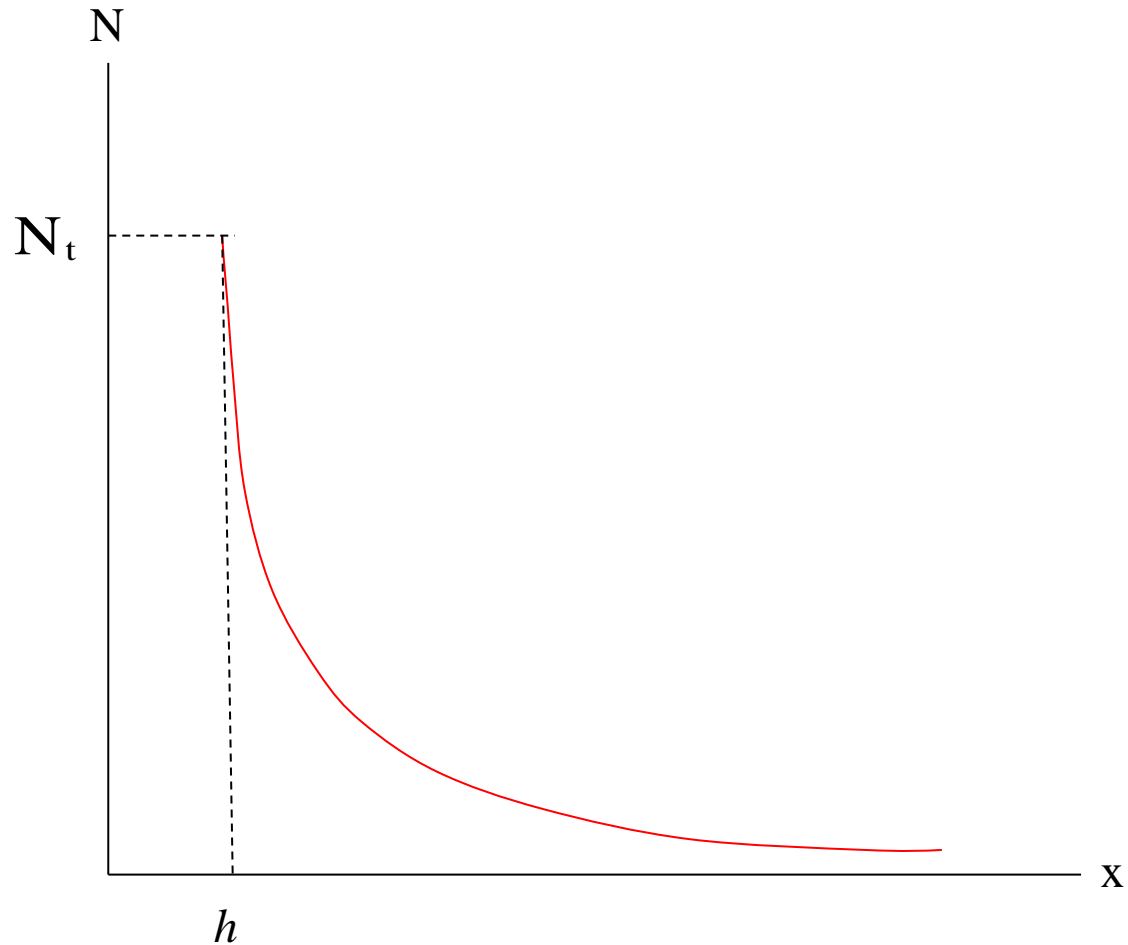
- Pigou's third criterion: reduced fluctuations

Context

B) Pigou and Pareto's Law of Income Distribution

- Pigou rejected Pareto's law.

- In Pareto's words, from a mix of induction and deduction we:

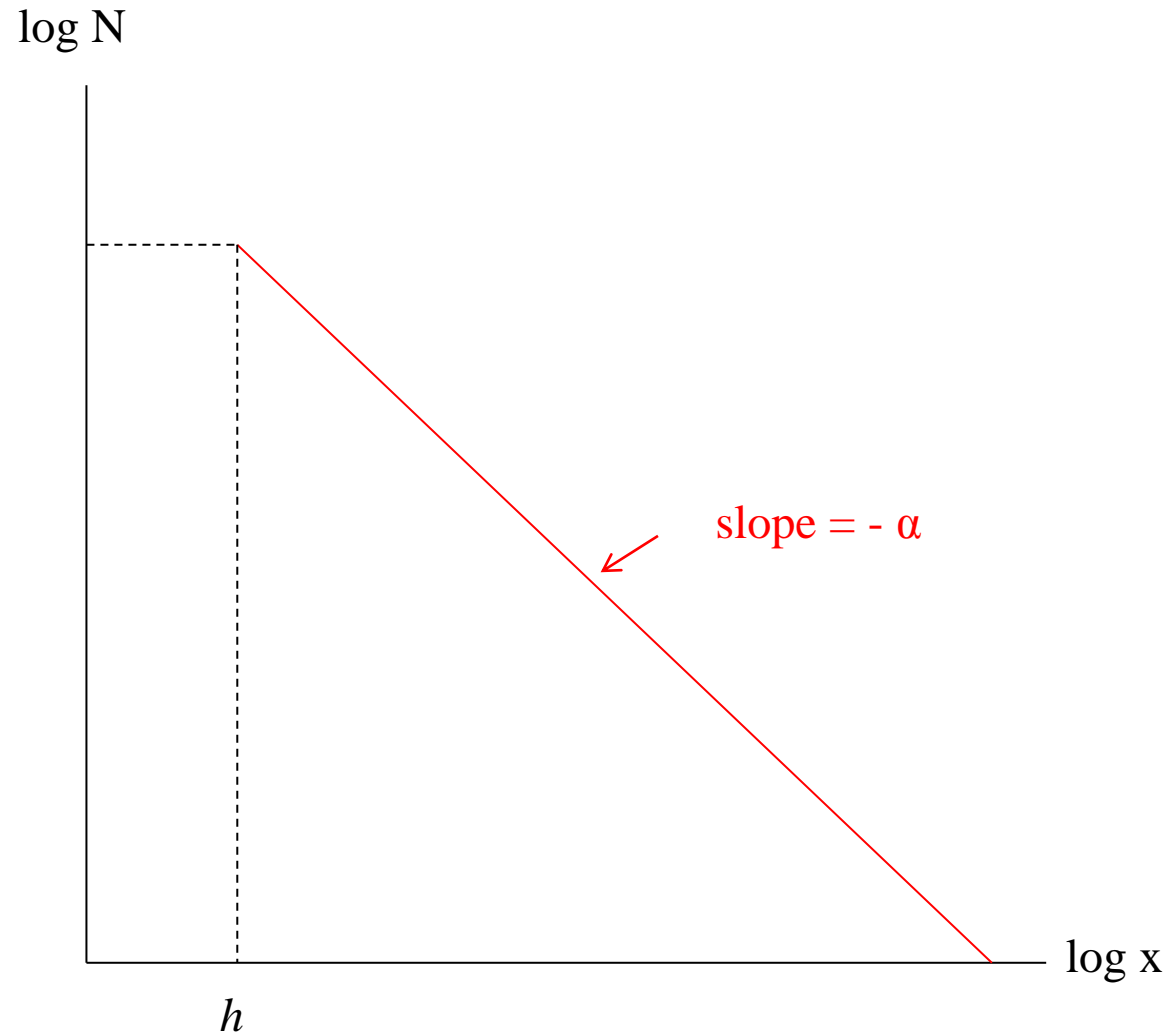   *"… derive two very important theorems.*

    The first of these theorems teaches us that the distribution of income is not due to chance."

The Pareto Distribution of Income Curve

h = some low income level above survival for which curve holds

Log form of the Pareto Distribution on Income

slope = - α

log N

log x
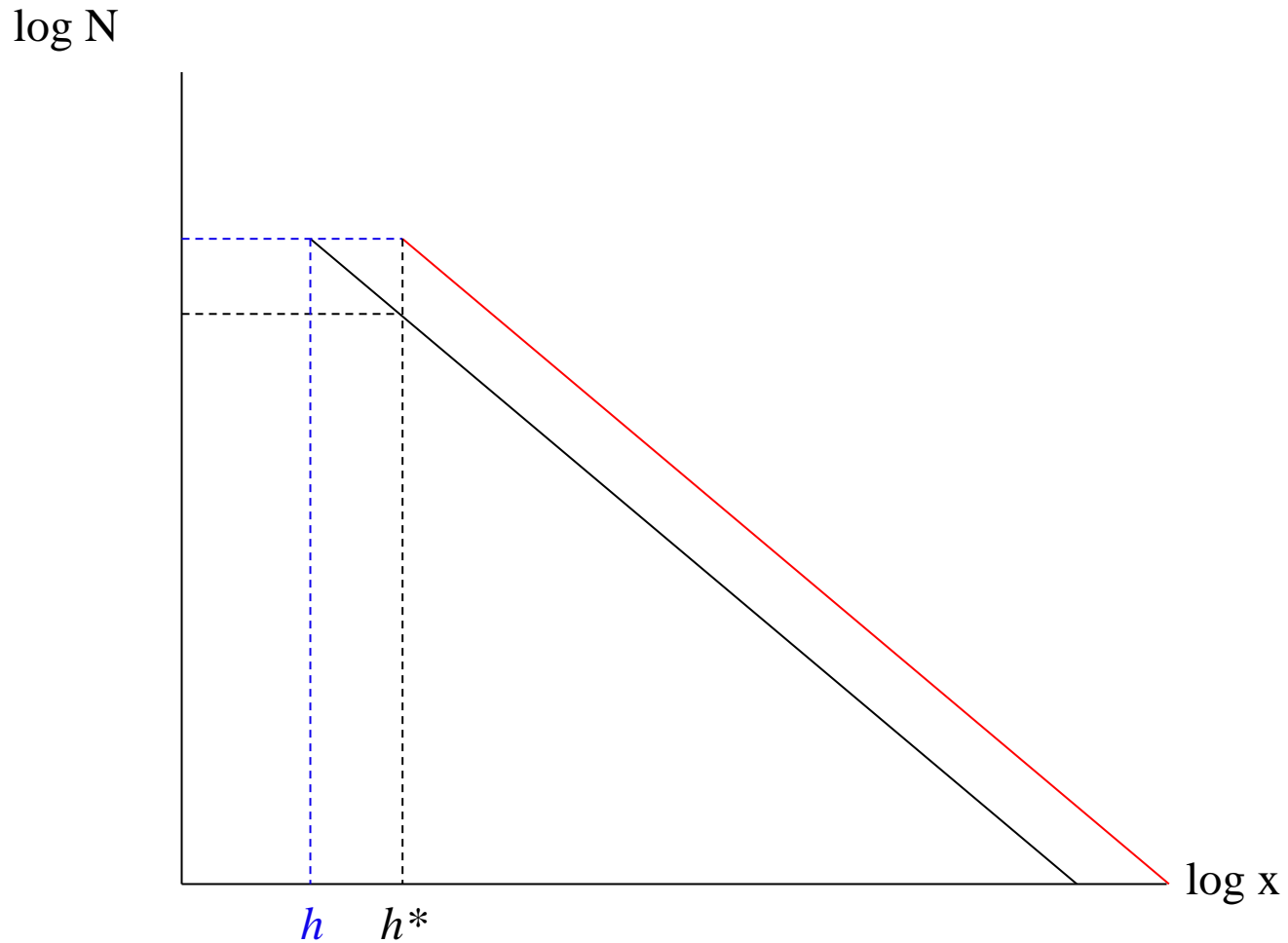
h

Context

b) Pareto's Law

Back to Pareto's theorems:

> *"The second tells us that to **increase the level of the minimum income** or to **reduce the inequality of income** it is necessary that wealth increase more rapidly than population."*

- This is the part that Pigou took greatest issue with.
- It challenged the relevance of his second criterion.
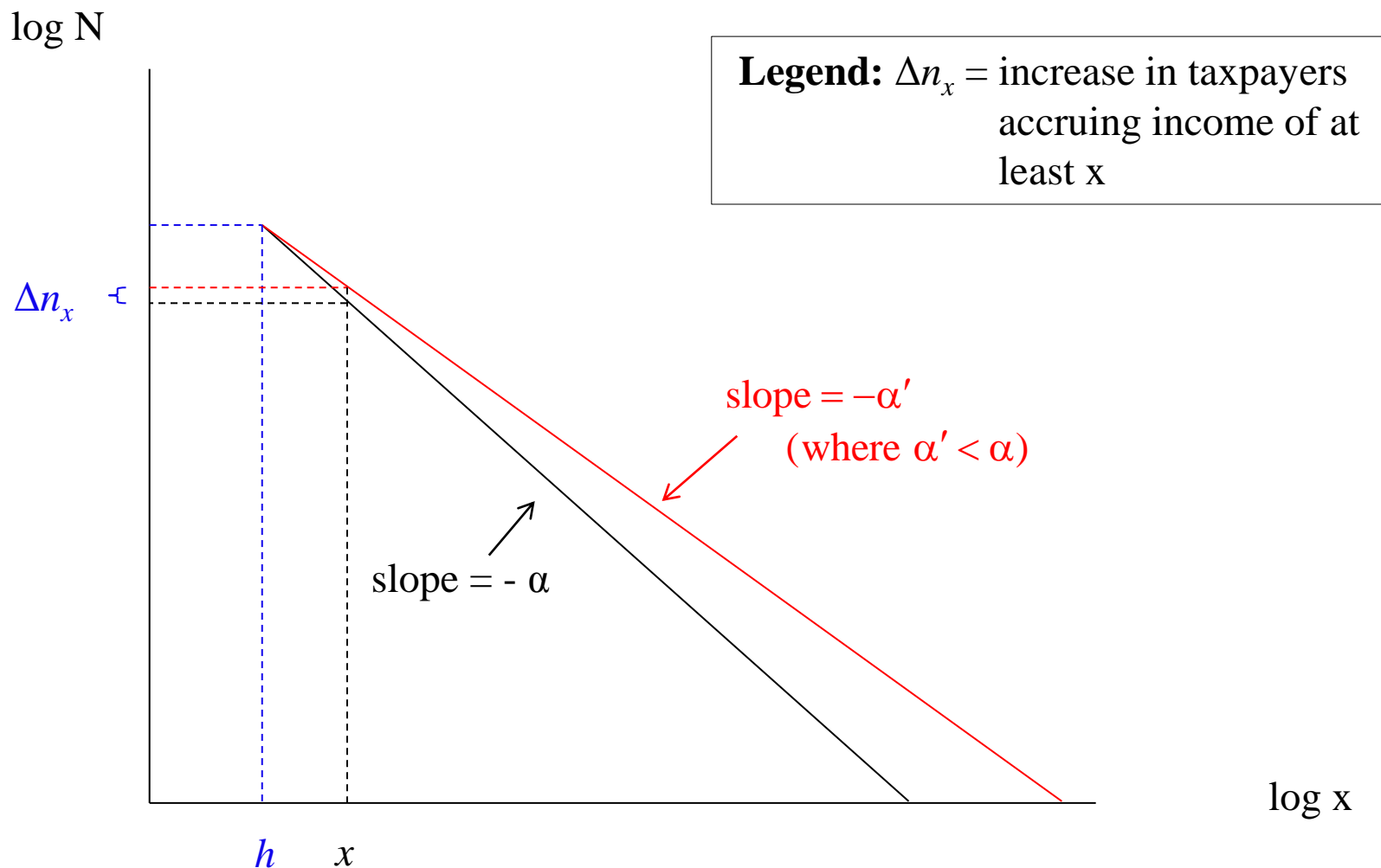- But Pigou misread Pareto on this matter.

Pigou saw this part of Pareto's analysis

$$\Delta h \neq 0 \qquad \Delta \alpha = 0$$

Pigou did not see this part of Pareto's analysis
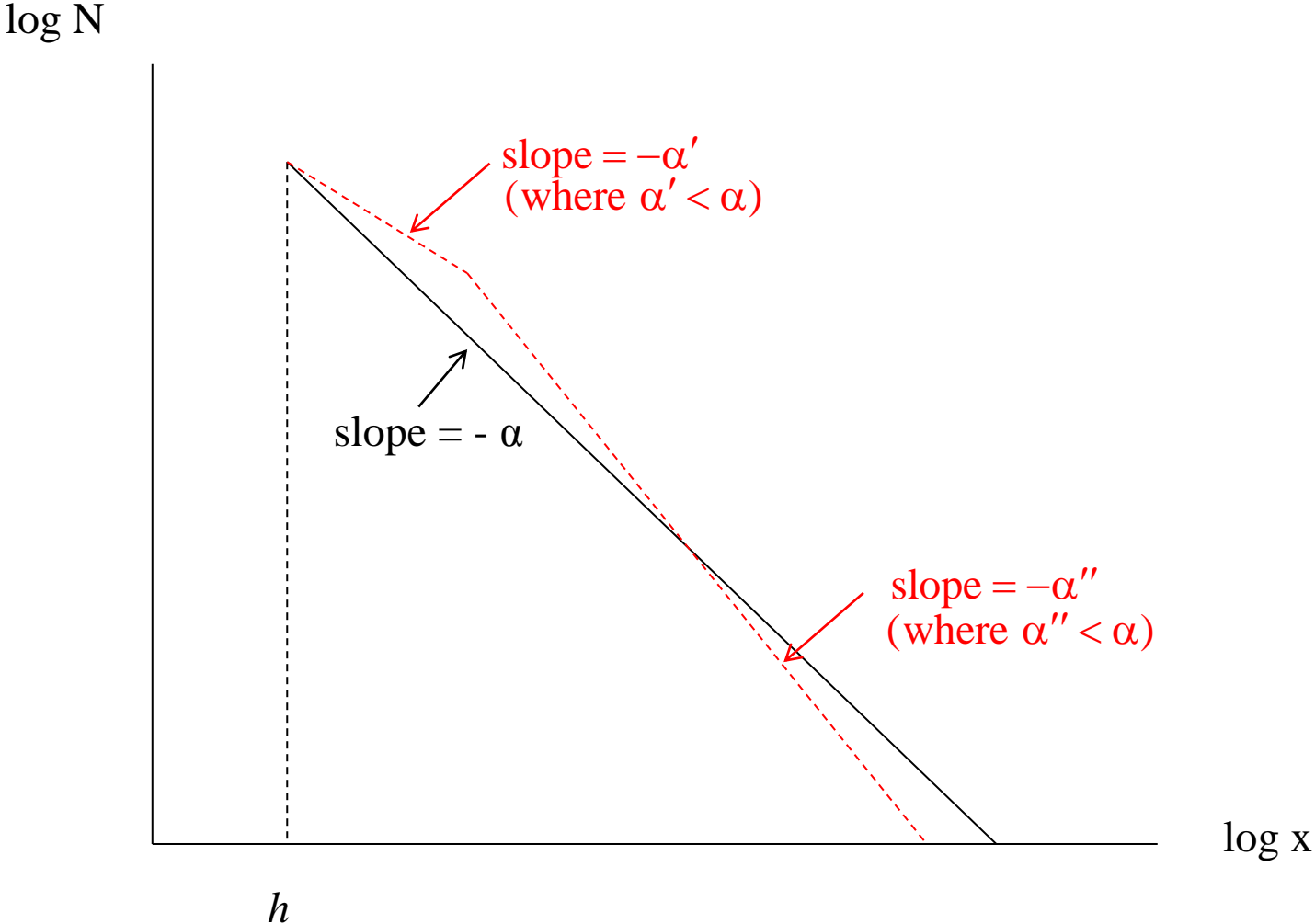
$$\Delta h = 0 \qquad \Delta\alpha \neq 0$$

log N

Legend: Δn_x = increase in taxpayers accruing income of at least x

Δn_x

slope $= -\alpha'$
(where $\alpha' < \alpha$)

slope $= -\alpha$

log x

h x

What Pigou needed to argue was that the Log Distribution Curve has at least one kink

log N

slope $= -\alpha'$
(where $\alpha' < \alpha$)

slope $= -\alpha$

slope $= -\alpha''$
(where $\alpha'' < \alpha$)

log x

h

Context

Now on to Monetary Issues and topic of this paper

- Pigou, 1917, Classic QJE Paper on the "Value of Money.

- Pareto, unpublished 1920-21 manuscript "Note critiche di teoria monetaria" [2005, Mornati].

- Pigou & Pareto reflect of the QT

2) Pigou's formalisation of the Quantity Theory.

1) Fisher: $MV = P^n T$

2) Fisher: $P^w = \dfrac{T}{MV}$; Pigou: $P^w = \dfrac{kR^w}{M}$

3) $\%\Delta P^n = \%\Delta M$; or $\%\Delta P^w \approx -\%\Delta M$

3) Pareto's formalisation of the Quantity Theory

1) Fisher's Transactions

$$T^w p^w + T^o P^o$$

2) Money in base year

$$M = \frac{\alpha \left(T^w p^w + T^o P^o \right)}{V}$$

3) Coefficients: year n to $n+1$

$$\nu = \frac{1}{1+g} \qquad \mu = \frac{1}{1+\pi}$$

4) Money in year $n+1$.

$$M_{n+1} = \frac{\alpha_n \left\{ \dfrac{T_n^w p_n^w}{\nu\mu} + \dfrac{T_n^o P_n^o}{\nu\mu} \right\}}{V_n}$$

Pareto's formalisation of the Quantity Theory

5) Price change:

$$\%\Delta P^{w} = \left(\frac{\mu}{v} - 1 \right) \cdot 100$$

$$\%\Delta P^w \approx (g - \pi)100$$

6) Money quantity change:

$$\%\Delta M = \left(\frac{1}{v\mu} - 1 \right) \cdot 100$$

$$\%\Delta M \approx (g + \pi)100$$

Conclusion: QT requires v = 1 (i.e. growth, g, = 0)

5) Pigou & Pareto: concerns with the Quantity Theory

Pigou's primary concern is that the share of real cash balances, *k*, changes.

He adjusts k with movements in the proportions of :
- customer deposits that banks hold in currency; &
- Individual's cash balances held in banks & currency

Causal impact of real activity, R , on k is discussed.

R was Pareto's primary concern: he rejected neutrality.

$$M = \frac{\alpha \left(T^{W} p^{W} + T^{\circ} P^{\circ} \right)}{V}$$

Pigou & Pareto: difference in rhetoric regarding QT

Pigou on the quantity theory

"At the outset I insist that, tho the machinery that I shall suggest in the following pages is quite different from that elaborated by Professor Irving Fisher in his admirable *Purchasing Power of Money*, and, as I think, more convenient, I am not in any sense an 'opponent' of the 'quantity theory' or a hostile critic of Professor Fisher's lucid analysis."

5) Pigou & Pareto: difference in rhetoric regarding QT

Pareto on the quantity theory

"One has a theory, complete, simple, beautiful. A shame it does not accord too much with the facts. … The reality is that there is only a relationship of interdependence and to know the particulars [of the relationship between the quantity of money and prices] considerations other than monetary circulation and prices are needed."

5) Pigou & Pareto: difference in rhetoric regarding QT

There are three substantive reasons for the difference

1) QT as a true or false proposition (Pareto) v. a way of organising thoughts to think about money (Pigou).

2) The different treatment of read economic activity, R, in relation to money.

3) Interdependence between real activity and money, in Pareto, finds its explanation in other variables outside economic: sociology of money is not neutral.

6) Conclusion

Pigou and Pareto would agree that price levels and the quantity of money only move proportionately in highly qualified circumstances.

But they separate on the neutrality of money, with Pareto emphasising interdependence between real and monetary; not Pigou.

Conclusion

This represents a broader difference on the use of equations, and the standards by which you decide to use equations, between Lausanne and Cambridge.

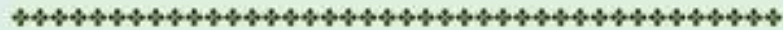- Verify fact v. illustration of a mode of thinking.

Curiously though, in this case Cambridge emphasises the equilibrium state, in a monetary world, more than Lausanne.

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