

# MONEY AND MACROECONOMICS (AND INFLATION)

MARC LAVOIE

Emeritus Professor  
IMK Research Fellow  
Policy Fellow, Broadbent Institute



uOttawa

L'Université canadienne  
Canada's university

# OUTLINE

- Background
- Banks vs the shadow banking system
- Central banking
- PK open-economy monetary economics
- PK inflation theory

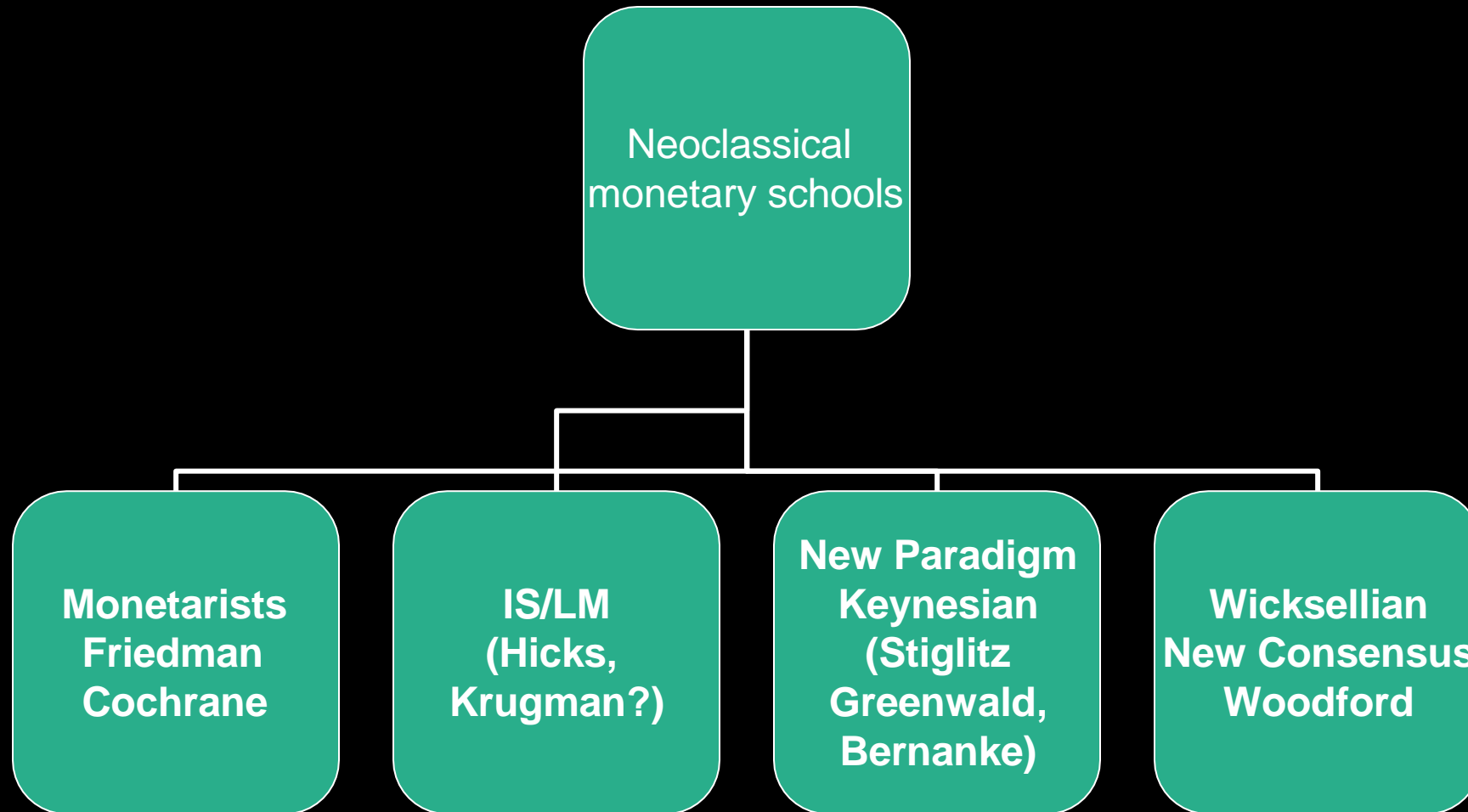
# SECTION 1

- A BACKGROUND TO POST-KEYNESIAN  
MONETARY ECONOMICS

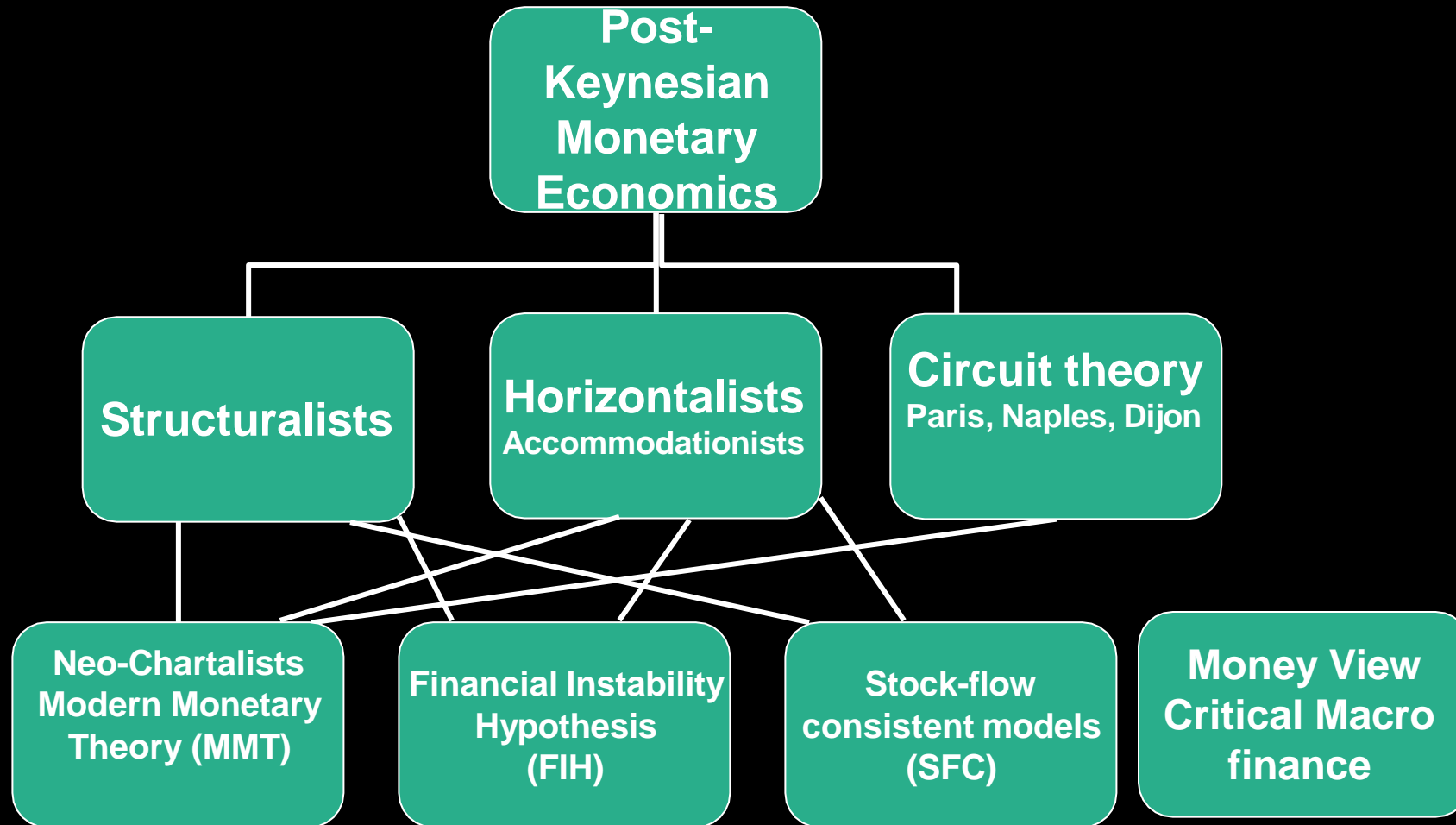
# ORIGINS

- “Highbrow opinion is like a hunted hare; if you stand in the same place or nearly in the same place it can be relied upon to come round to you in circle” (**D.H. Robertson 1956**)
- **“Economic ideas move in circles: stand in one place long enough, and you will see discarded ideas come round again” (A.B. Cramp 1970)**
- Tooke, Thornton 1830’s, Banking school
- Wicksell 1900
- Radcliffe committee 1959
- Robinson 1956, Kahn 1958, **Le Bourva 1959-1962**, Kaldor 1970-1982,
- Davidson 1972, Weintraub 1978, Eichner 1985, Minsky 1986, B.J. Moore 1988, Graziani 1989, Wray 1998, Rochon 1999

# NEOCLASSICAL MONETARY SUB-SCHOOLS



# PK MONETARY SUB-SCHOOLS



# HORIZONTALISTS *vs* STRUCTURALISTS

- Short rate *vs* long interest rate
- Credit constraints
- The shape of the supply of reserves
  
- **Which view has been vindicated?**

# MAIN FEATURES, MONEY AND CREDIT

Features	PK school	Neoclassical
Money	Has counterpart entries	Falls from an helicopter
Money is seen	As a flow and as a stock	A stock
Banks are	Creators of credit flows	Financial intermediaries
<b>The supply of money is</b>	<b>Endogenous and demand-led</b>	<b>Exogenous</b>
Main concern with	Debts, credits	Assets, money
Causality	Reversed: credits make deposits (credit divisor)	Reserves allow deposits (money multiplier)
Credit rationing due to	Lack of confidence, uncertainty	Asymmetric information



# WHAT PKE IS CLEARLY AGAINST

- PKE reject the money creation process based on the money multiplier and the fractional-reserve banking system !

# EVEN THE BANK OF ENGLAND AGREES!

- “One common misconception is that banks act simply as intermediaries, lending out the deposits that savers place with them. In this view deposits are typically ‘created’ by the saving decisions of households and banks then ‘lend’ out those existing deposits to borrowers.”
- “Another common misconception is that the central bank determines the quantity of loans and deposits in the economy by controlling the quantity of central bank money – the so-called ‘money multiplier’ approach”. (McLeay et al. 2014: 2)

# MAIN FEATURES, INTEREST RATES

Features	PK School	Neoclassical
Interest rates	Are income distribution variables	Arise from market laws (loanable funds)
Liquidity preference	Determines the differential relative to base rate	Determines the interest rate
Base rates	Are set by the central bank	Are influenced by market forces
The natural rate	Takes multiple values or does not exist	Is unique, based on thrift and productivity

# DISTINCTIONS ARE NOT AS SIMPLE AS BEFORE

- Central bankers and several mainstream economists now recognize that the money supply is endogenous.
- Central bankers and a number of mainstream economists recognize that the central bank sets (short-term) interest rates rather than the money supply.
- What post-Keynesian economists have been saying since the 1970s and 1980s is to a large extent part of the consensus view, 30 or 40 years later, with one exception – the natural rate of interest.

# A CRUCIAL REJECTION OF THE NATURAL RATE

- Thus, as Mario Seccareccia (1994, p. 70) points out, we cannot just assert that ‘it is money-supply endogeneity which fundamentally distinguishes the neoclassical from the post-Keynesian conception of money, one would like to think that there is substantially more than the endogeneity/exogeneity issue that separates them’.
- As Smithin (1996, p. 93) puts it, ‘in the absence of a natural rate of interest, it can be argued that central bank control over short real rates will ultimately influence the entire structure of interest rates in the economy, including long rates....Eventually, the real economy must adjust to the policy-determined interest rate, rather than vice-versa. This is therefore the precise opposite to the natural rate doctrine’.

# MAIN FEATURES, MACRO IMPLICATIONS

Features	PK School	Neoclassical
Schumpeter's distinction	Monetary analysis (monetized production economy)	Real analysis (money neutrality, inessential veil)
Financial disturbances have	negative effects both in short and long run	Have effects only in the short run
Macro causality	Investment determines saving	Saving determines investment
Inflation	The growth in money stock aggregates is caused by the growth in output and prices	Price inflation is caused by an excess supply of money (or discrepancy between actual and natural interest rate)

# SECTION 2

- BANKS VS THE SHADOW BANKING SYSTEM

• BANKS



# THREE VIEWS OF BANKING

- **The loanable funds view:** the *financial intermediation theory* of banking (Werner 2016), the *New view* of banking (Tobin 1963), *the intermediation of loanable funds* (Jakab and Kumhof 2015): banks are only financial intermediaries [they lend deposited gravel].
- **The deposit or money multiplier view,** the fractional-reserve banking view, the *Old view* of banking (Tobin 1963).
  - The New Keynesian credit channel (Bernanke, Gertler, Blinder) is a mixture of the last two (banks are special because they lend to those who cannot access savings on financial markets).
  - Krugman (2012a) first took a loanable funds approach in his debates with Steve Keen and MMT authors, then moved on to a money multiplier approach: “A key limiting factor in the size of bank balance sheets is the amount of monetary base the Fed creates” (Krugman, 2012b).

# THE POST-KEYNESIAN VIEW OF BANKING

- *The endogenous theory of money* (Ábel *et al.* 2016);
- Banks as *originators of inside money* (Bianco and Sardonì 2018);
- the *credit-creation* theory of banking (Werner 2015);
- the *financing through money creation* view of banking (Jakab and Kumhof 2015);
- the *bank-originated money and debt* view (Keen 2019);
- the *traditional banking theory* (Sissoko 2015).

# THE ROLE OF BANKS

- Banks are not merely financial intermediaries, that would lend deposits that they have been entrusted with.
- **Loans make deposits**
- Banks have the capacity to create new credit and new money (no need for gold, reserves at the central bank, previous savings or cash being deposited at a bank)
- They can add to the capacity of agents to purchase financial assets or goods and services.

# LOANS ARE CREATED *EX NIHILO*

- Loans are created *ex nihilo*, at the stroke of a pen, or by punching a key on the computer, *as long as the borrower is credit-worthy*, that is, as long as the borrower can show some collateral.
- The main limit to this process is given by the amounts of loans which can be granted to credit-worthy borrowers. This depends on the willingness of borrowers to borrow, on the amount of collateral they can show, and on the willingness of banks to grant credit-worthy status to their customers.
- In a sense, loans are not truly created *ex nihilo*, since they generally require collateral.

# ANY OTHER LIMIT TO CREDIT CREATION?

- Compulsory bank reserves (deposits of banks at the central bank) ?
- Access to banknotes issued by central bank ?
- Liquidity ratios?
- The confidence/trust of other financial institutions (easier if everyone is moving in step)
- Bank equity (the own funds of the banks = retained earnings plus the proceeds of share issues) ?
- Capital adequacy ratios (Basel III ratios = own funds to risk-weighted assets) ?

# Capital adequacy ratios, the new constraint?

- Banks can:
  - Increase the spread between lending and deposit rates;
  - Increase the proportion of retained earnings;
  - Issue more shares;
  - Grant loans to investors under the condition that they use them to buy shares issued by the bank;
  - Do some innovative accounting.

- BANKS VS NON-BANKS

# BANKS VS NON-BANK FINANCIAL INSTITUTIONS

- **For the mainstream** banks are banks because:
  - They are regulated;
  - They benefit from deposit insurance;
  - They have access to the central bank discount window
  
- **For PK authors,** banks are banks because:
  - They create their own initial finance
  - They are a direct part of the payment and settlement system



# INITIAL FINANCE VS FINAL FINANCE BANKS VS NON-BANKS

- The difference is that when non-banks borrow, they need *financing* to start with. When banks need to borrow, this occurs after the fact; banks create their own financing as they make the loan.
- This is the distinction made by post-Keynesian circuitists, inspired in particular by Parguez (1975) and Graziani (1989), but also Davidson (1972), between *initial finance* and *after-the-fact funding or final finance*.

# SFC AUTHORS: TOBIN VS GODLEY

- Both assume that there is an imperfect substitutability between financial assets.
- Tobin saw banks as essentially no different from other financial intermediaries; he relied on a variant of the (variable) money multiplier story. **Banks play no specific role.**
- By contrast, Godley had a vision of monetary matters based on **banks as creators of loans to facilitate production** or speculation, and on the post-Keynesian endogenous money supply view, where reserves are supplied on demand at the target interest rate set by the central bank, in the tradition of Kaldor (1982), Moore (1988), Graziani (1989).

- LIQUIDITY CREATION AND SHADOW BANKS

# CREDIT CREATION VS LIQUIDITY CREATION

- Nersisyan and Dantas (2017, 2018) argue that it would be a mistake to present non-bank financial institutions merely “as passive entities that intermediate between savers and lenders”.
- They argue that banks and non-banks show great similarities, **because non-banks, just like banks, have the power to change the level of economic activity.**
- **Non-bank financial institutions are “liquidity creators”,** the activities of which “affect the real economy”, and thus “**they can be a source of instability**”. They are more than intermediaries.

# LIQUIDITY CREATION II

- **Similar arguments are made by advocates of *critical macro-finance* or the *political economy finance view*, who argue that the definition of money must be extended to include repos, and possibly the shares of money market funds and asset-backed commercial paper (Gabor, 2020; Murau and Pforr, 2020).**
- All these claims are based on the hierarchy of money view.
- **They resurrect a neglected point made before by Palley (1996), under the guise of the *endogenous theory of finance*, when he contended that both versions of endogenous theory, the horizontalist and the structuralist ones, “are flawed because of their exclusive attention to the banking system” .**

# OVER-MINIMIZING THE ROLE OF NON-BANKS

- It is true that the role of non-banks has often been overly minimized.
- Alfred Eichner (1987): “It is only through a bank loan that the amount of funds circulating as checkable deposits can increase. If, instead, funds are borrowed from a nonbank financial intermediary, the latter will need to draw down its cash balance at some bank....**This is why the existence of nonbank financial intermediaries can usually be ignored** and the flow of funds model simplified by eliminating the nonbank financial sector”

# BANKS ARE STILL UNIQUE I

- It is true that the variety of operations in which non-banks can engage in today “make murkier the distinction between *bona fide* banks and non-bank financial institutions” (Lavoie 2014).
- But Bouguelli (2018) argues that “making a sharp distinction between commercial banks and other financial institutions” provides a “framework that has the advantage of clarity”.
- To speak of *true liquidity versus fictitious liquidity* illustrates the **fact that banks and non-banks face different constraints** and play a different role in the overall financial system.

# BANKS ARE STILL UNIQUE II

- “While the commercial bank can buy the asset with its own liability, **the investment bank has to borrow the liability of a commercial bank (a deposit) in order to get hold of the securities**” (Bouguelli 2018), as when it uses repos to access money.
- *Shadow bank* is thus a misnomer.
- Bonizzi and Kaltenbrunner (2020) concur with Bouguelli, arguing that **the special role of banks in determining credit conditions is being underplayed by advocates of critical macro-finance and of Mehrling’s money view**, who believe that shadow banking is now the centrally important channel of credit.



# SHADOW BANKS AND FINANCIAL FRAGILITY

- Securitization is associated with the *originate-and-distribute* model of banking.
- This makes the chain from the initial borrower to the ultimate fund holder longer, more complex and more opaque.
- **It is also likely to make the system more fragile**, as the default risk of the borrower is being passed along by the originator to agents who may lack a proper understanding of the characteristics of the financial asset.
- **Repos protect the lender but weaken the borrower, who faces possible increases in collateral and haircuts (Sissoko)**
- **Securitization and repos are likely to decrease lending standards.**

# WHAT IS THE RAISON D'ÊTRE OF THE SHADOW BANKING SYSTEM I ?

- In Palley (1996), the increasing importance of non-bank financial institutions was due to regulatory arbitrage, **through the avoidance of compulsory reserve requirements.**
- **For Palley (1996), non-banks made possible the creation of more credit, by circumventing liquidity shortages,** in line with Minsky's endogenous money theory based on a variable velocity of money: .), "Raising finance in capital markets ... is more expansionary [than bank loans] because it by-passes the monetary constraint imposed by reserve requirements"
- **Since reserves are endogenous, this cannot be. the case.**

# WHAT IS THE RAISON D'ÊTRE OF THE SHADOW BANKING SYSTEM II ?

- For many modern authors, the shadow banking system makes possible the creation of more credit, through regulatory arbitrage, by avoiding constraining capital adequacy requirements.
- With the same equity capital, banks would make more loans.
- There is regulatory arbitrage: but this does not mean that capital requirements restrict the creation of bank loans.

# WHAT IS THE RAISON D'ÊTRE OF THE SHADOW BANKING SYSTEM PK VIEW ?

- The post-Keynesian perspective ought to be that securitization allows banks to have a lower overall capital to asset ratio, **which increases their rate of return on equity**, and not that it allows banks to make more loans.
- **It allows “the originating banks, as well as those purchasing the securitized loans, to extend leverage beyond previously recognized safe ratios, thus improving their returns on equity, while simultaneously fully abiding by the terms of the Basel capital adequacy ratios”** (Lavoie 2012-13).

# ANY THERE LIMITS TO CREDIT CREATION?

- **What if the equity capital ratio has reached its limit?** Banks can:
  - Raise the spreads between lending and deposit rates;
  - Distribute less dividends;
  - Reduce the size of stock-options provided to their top managers;
  - Issue new shares;
  - Provide loans to investors on the condition that they purchase newly-issued shares;
  - Ask accountants to do window-dressing.

In the worse-case scenario, when banks make heavy losses and nobody wants to buy shares, the government or the central bank will have to step in and provide equity.

- SOME BALANCE SHEETS TO BETTER UNDERSTAND

# CREATION EX NIHILO BY BANKS

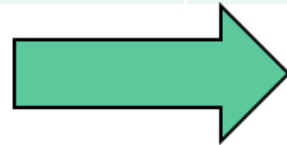
## Banks

Assets

Loans +100

Liabilities

Deposits +100



# CREDIT IS CRUCIAL, NOT MONEY, AND THE EX POST ROLE OF NBFY COUNTERPARTIES

Banks		NBFY	
<u>Assets</u>	<u>Liabilities</u>	<u>Assets</u>	<u>Liabilities</u>
<u>Loans</u> 100	<u>Deposits</u> 80	CDs 20	MMF <u>shares</u> 20
	CDs 20		

Banks make loans but now a proportion of the deposits move into money market funds



# Non-bank financial institutions do create credit when they lend funds to non-financial agents or non-banks

	Banks		NBFI (MMF)		NFA	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
2	Loan +100	Deposit +80 CD +20	CD +20	MMF share +20	Deposit 80 MMF 20	Loan +100
3	Loan +100	Deposit +95 CD +5	CD +5 Security +15	MMF share +20	Deposit +95 MMF +20	Loan +100 Security +15

# THE CREDITS BY NBFIs ARE JUST AS GOOD AS THE CREDITS BY BANKS

- In a modern financial economy it is difficult to distinguish the effects of credits made by banks, created ex nihilo, and credits made by non-bank financial institutions, arising from previous savings.
- What really counts for economic activity is the decision of agents to spend or to invest (in the case of firms).
- This is why the flow of new credit in the Levy economic model helps to forecast economic activity.

# BANKS ARE RESPONSIBLE FOR THE 2008 MESS!

- The consensus post-Keynesian position (see also Unger (2016) from the Bundesbank) on this issue, is or should be that “the largest part of the shadow banking system enters the credit intermediation process only after the loans to the ultimate borrowers and the means of payment to finance them have already been created”.

# SECTION 3

- CENTRAL BANKING

- THE DEFENSIVE ROLE OF CENTRAL BANKING + MMT

# MONETARY TARGETING VS INTEREST-RATE TARGETING

- Central banks now explicitly target interest rates.
- The procedures of several central banks are now more transparent (than they were and than those of other central banks), so the **horizontalist story is more obvious.**

# TWO DIFFERENT JUSTIFICATIONS FOR THE CURRENT INTEREST RATE PROCEDURES ?

- **Post-Keynesians**

- Based on a **microeconomic** justification
- Tied to the inner functioning of the clearing and settlement system
- Linked to the day-by-day, hour-per-hour, operations of central banks

- **New Consensus**

- Based on the 1970 Poole article
- A **macroeconomic** justification
- If the IS curve is the most unstable, use monetary targeting
- If the LM curve is unstable (money demand is unstable), use interest rate targets

# THE MICROECONOMIC JUSTIFICATION FOR INTEREST RATE TARGETING

- Central bank interventions are essentially « defensive ». **Their purpose is to compensate the flows of payments between the central bank and the banking sector.**
- These flows arise from: a) collected taxes and government expenditures; b) interventions on foreign exchange markets; c) outright or repo purchases or sales of government securities, or repurchase of securities arriving at maturity; d) provision of banknotes to private banks by the central bank.
- **Without these defensive interventions, bank reserves or clearing balances would fluctuate enormously from day to day, or even within an hour. The overnight rate would fluctuate wildly.**



# AUTHORS WHO SUPPORT THE MICROECONOMIC EXPLANATION

- **Several central bank economists**
  - Bindseil 2004, 2014 ECB, Clinton 1991 BofC, Lombra 1974, Whitesell 2003, Keister et al. 2008 Fed, Bank of England 2014
- **Some post-Keynesian authors (but not all)**
  - Eichner 1985, and all MMT authors (Mosler 1997-98, Wray 1998, etc)
- **Institutionalists**
  - Fullwiler 2003 et 2006

# THIS WAS UNDERSTOOD A LONG TIME AGO BY SOME PK ECONOMISTS

- “The Fed’s purchases or sales of government securities are intended primarily to offset the flows into or out of the domestic monetary-financial system” (Eichner, 1987, p. 849).
- “Fed actions with regards to quantities of reserves are necessarily defensive. The only discretion the Fed has is in interest rate determination” Wray (1998, p. 115).

# THERE IS NO RELATIONSHIP BETWEEN OPEN MARKET OPERATIONS AND BANK RESERVES

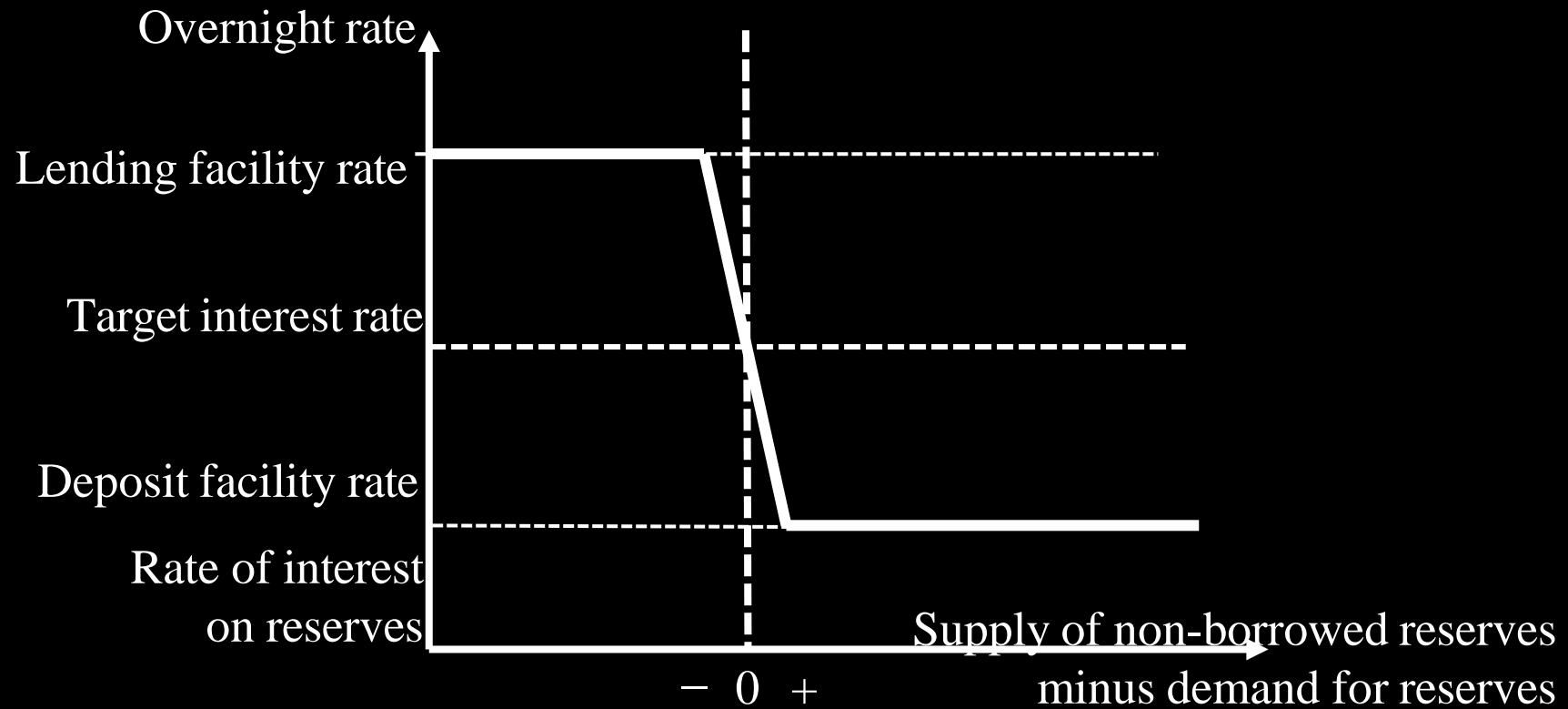
- **“No matter what additional variables were included in the estimated equation, or how the equation was specified (e.g., first differences, growth rates, etc.), it proved impossible to obtain an  $R^2$  greater than zero when regressing the change in the commercial banking system’s nonborrowed reserves against the change in the Federal Reserve System’s holdings of government securities ....”**(Eichner, 1985, pp. 100, 111).

- MONETARY POLICY IMPLEMENTATION  
TODAY

# Four ways to control interest rates

- a symmetric corridor system;
- a floor system;
- and a ceiling system;
- A no-interest on reserve system (Fed before 2008)

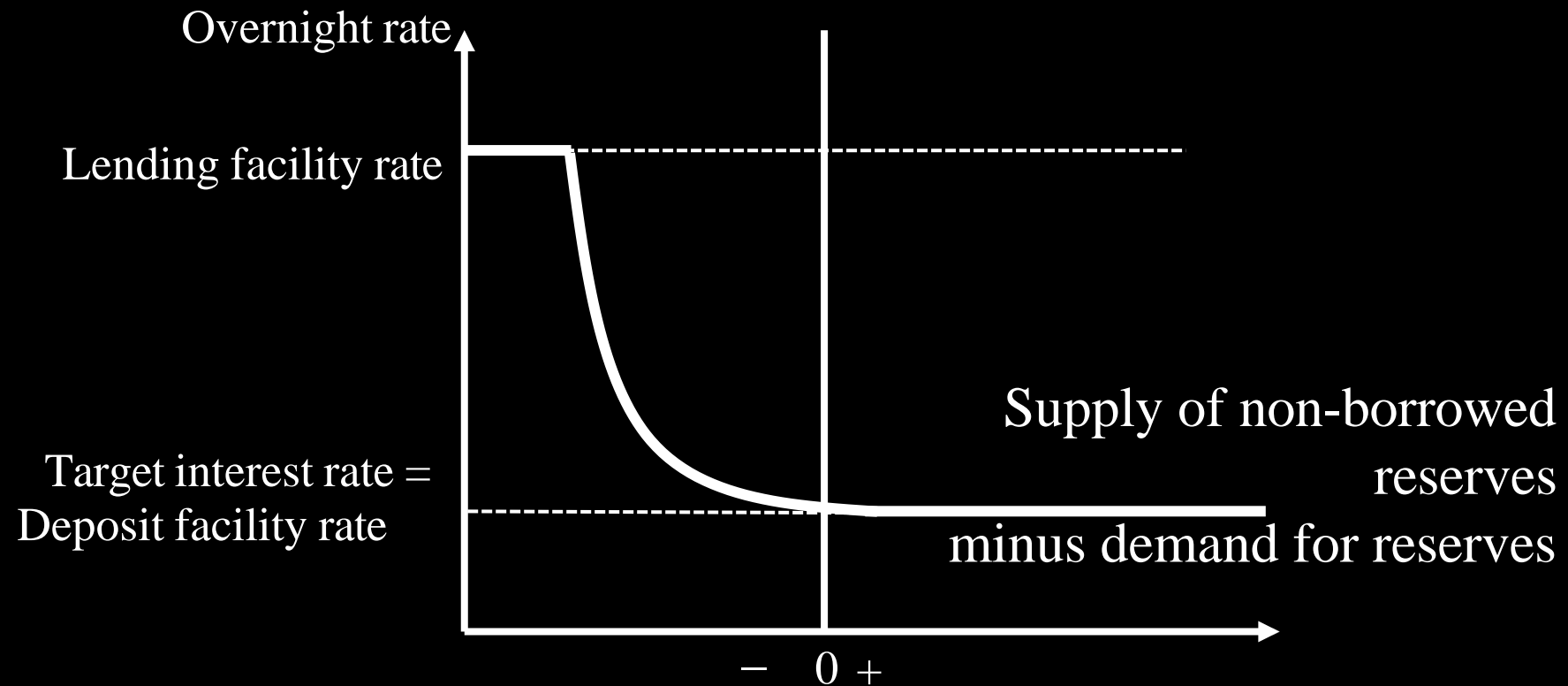
# The symmetric corridor system (IOR: interest on reserves)



# The decoupling principle

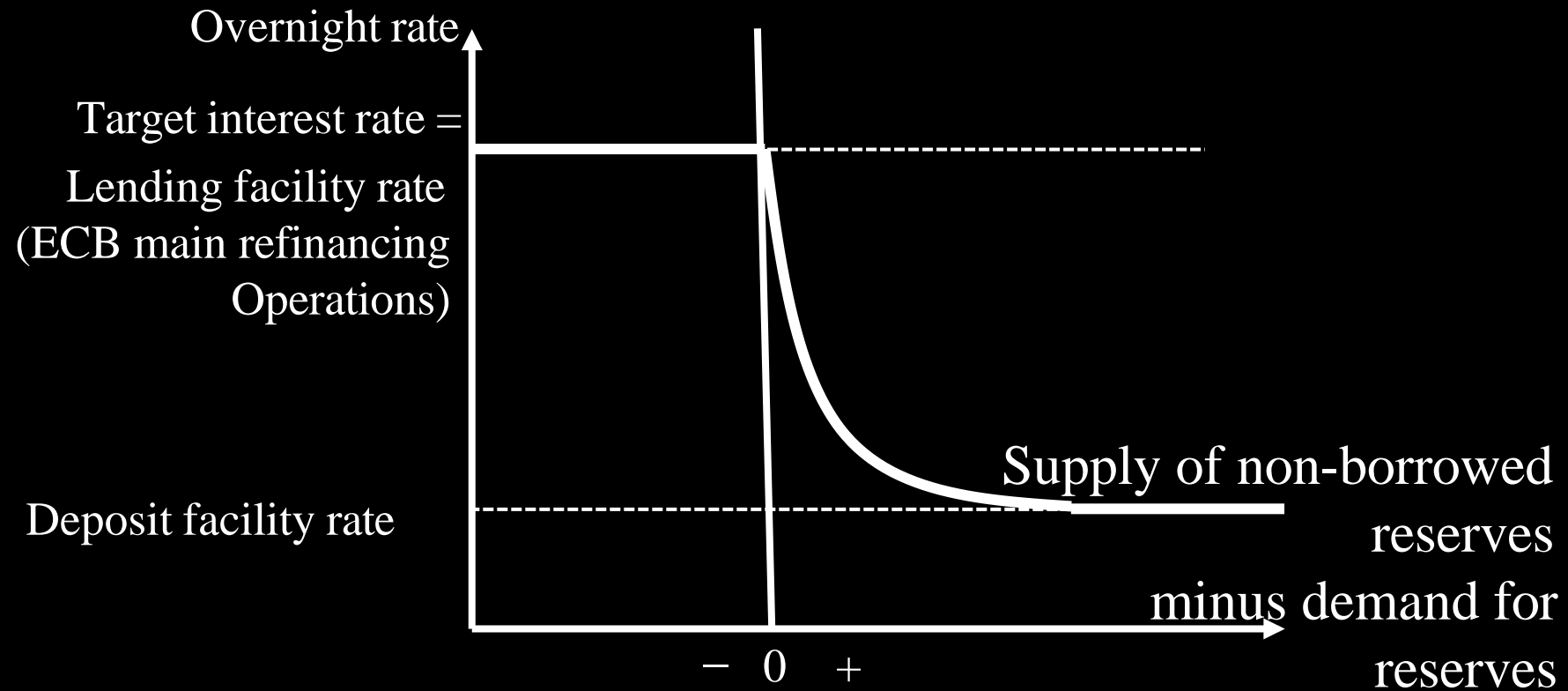
- ‘Changes to the monetary policy stance, that is, of the target short-term interest rate, may be made without any change in reserve market conditions by simply moving the standing facilities corridor in parallel with the target rate’ (Bindseil 2004a, p. 252).
- ‘Crucially, the interest rate can be set quite *independently* of the amount of bank reserves in the system. *The same amount of bank reserves can coexist with very different levels of interest rates; conversely, the same interest rate can coexist with different amounts of reserves*’. (Borio and Disyatat 2010, p. 56)

The floor system (Japan 1996; New Zealand and Norway before 2009; USA between 1933 and 1951 and since November 2008; some EU countries)





# The ceiling system ('in the Bank') Most countries in the past....



# HOW TO SET THE TARGET INTEREST RATE?

- For PKE, **the rate of interest is a distributive variable.**
- Different opinions on how the rate should be set (counter-cyclical or with few moves).
- Roughly speaking, it should provide a low real rate of return, or nominal rates ought to be tied to the growth rate of nominal wages (**Pasinetti, the just or fair rate**).

- QUANTITATIVE EASING (QE)

# QE: FALSE ARGUMENTS

- Sellers of assets will deposit the proceeds in banks, which will have more funds and more reserves at the central bank, thus allowing them to make more loans.
- This will lead to a multiple increase in the money supply;
- Here QE is just the child of monetarism, but in reverse gear.

# (QE): ACCEPTABLE ARGUMENTS (KEYNES 1930)

- QE supports asset prices and thus reduces long-term yields;
- QE thus helps firms to issue bonds and shares at a lower interest cost to finance their real investments;
- QE generates capital gains for sellers or holders of financial assets, thus helping to raise consumption expenditures.
- QE may help to depreciate the domestic currency, as asset-holders may decide to use their newly-acquired deposits to rebalance their portfolio by purchasing foreign financial assets.

# SECTION 4

- PK OPEN-ECONOMY MONETARY ECONOMICS

# STERILIZATION AND COMPENSATION

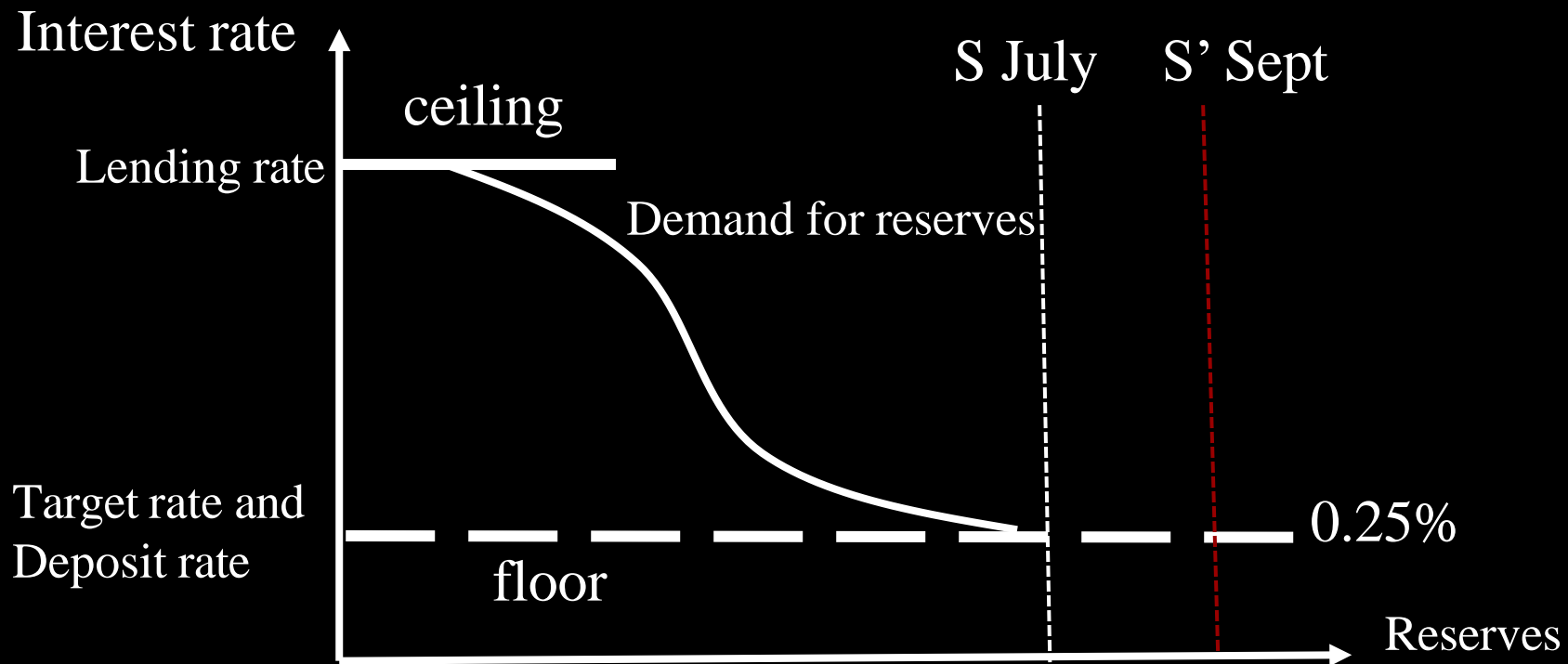
- The effect on the stock of base money of a purchase (sale) of foreign currency can be undone by the sale (purchase) of government securities at the initiative of the central bank. **This is sterilization.**
- Or it can be undone by endogenous changes in other elements of the balance sheet of the central bank. This is the **compensation thesis.**
- Sterilization or compensation is **not a matter of choice, it is a necessity as long as the central bank wants to keep the interest rate at its target level**, especially within a (symmetric or asymmetric) corridor system.
- Of course, this is **easier to do with a balance-of-payment surplus.**

# HISTORY SHOWS THAT THE RULES OF THE GAME NEVER HELD; THERE WAS ALWAYS COMPENSATION

- Bloomfield (1959, p. 49) in the period before the First World War – the heyday of the gold.
- Ragnar Nurkse (1944) for the 1922-1938 period.
- Pierre Berger (1972) Banque de France view
- Jacques Le Bourva (1962)



There is no need for sterilization (in a BOP surplus position) when there is a floor system (Switzerland July-September 2011, with target rate at 0 to 0.25% !)



# SECTION 5

- POST-KEYNESIAN THEORY OF INFLATION

# PK INFLATION THEORY IN A NUTSHELL

- Three main possible causes of inflation
  - A) **Conflictual inflation** (over relative income shares)
    - A conflict between workers and firms (fairness A1) or with rentiers
    - Wage-wage inflation – keeping up one’s rank in the wage hierarchy (relative fairness A2)
  - B) **Imported inflation** – arising from the rise in the prices of raw materials, the prices of which are determined by supply/demand on world markets, or arising from depreciation of the exchange rate (international income share conflict): *A trilateral conflict of interest exists between workers, industrialists, and raw materials producers* (Sylos-Labini 1979)
  - C) **A mitigated role for aggregate demand** – as measured by the rate of growth, the share of investment, the rate of capacity utilization, the rate of unemployment, or the change in the rate of unemployment

# REJECTION OF THE MONETARIST VIEW

- There may be a correlation between the level of prices and the stock of money (or between the rate of price inflation and the growth rate of money. BUT:

There is **reversed** causality, as one can guess from the endogenous money theory:

- The rise in prices causes the increase in the stock of money
- The key variable is the growth of credit

# AN IMPORTANT CAVEAT

There is reversed causality when looking at money aggregates and the prices of produced goods.

**However**, credit creation can lead to an inflation in the prices of financial asset, real estate prices, or futures prices.

This is part of the Minskyan financial instability hypothesis.

# THE IRONY

- **Left-wing post-Keynesians tend or tended to blame unions** for generating wage increases that exceed productivity growth, thus leading to price inflation.
  - *The long run stability or instability of prices will depend on the strength of the upward trend of the wage-unit (or, more precisely, of the cost-unit) compared with the rate of increase in the efficiency of the productive system (Keynes 1936, p. 309).*
- **Mainstream authors by contrast tend to blame the central bank** for creating an excess supply of money or tend to blame governments for excessive deficits, both of which are said to result in excess aggregate demand and hence in inflation or rising inflation.

# OUTLINE

- Background
- Modeling within a closed economy
  - Simple conflictual approach
    - Wage-wage and productivity-led inflation
  - The Phillips curve
    - NAIRU or no NAIRU?
- Modeling within an open economy
  - Imported materials
  - High and hyper inflation

- SOME BACKGROUND



# CONFLICTUAL INFLATION IN ALL PK WORKS

- All important earlier PK works emphasized conflictual inflation
  - Joan Robinson (the inflation barrier), 1956
  - J.K. Galbraith, *The New Industrial State*, 1967
  - Eichner and Kregel, *JEL* 1975
  - Paul Davidson, *Money in the Real World*, 1972
  - Adrian Wood, *A Theory of Pay*, 1978
  - John Cornwall, *Conditions for Economic Recovery*, 1983
  - Malcolm Sawyer, *Macroeconomics in Question*, 1985
  - Amit Bhaduri, *Macroeconomics*, 1986
  - Peter Reynolds, *Political Economy, A Synthesis of Kaleckian and Post Keynesian Economics*, 1989
  - Lance Taylor, *Income Distribution, Inflation and Growth*, 1991
  - Fernando de Carvalho, *Mr Keynes and the Post Keynesians*, 1992
  - Philip Arestis, *The Post-Keynesian Approach to Economics*, 1992
  - Marc Lavoie, *Foundations of Post-Keynesian Economic Analysis*, 1992
  - Richard Burdekin + Paul Burkett, *Distributional Conflict and Inflation*, 1996
  - Thomas Palley, *Post Keynesian Economics*, 1996

# AN EXAMPLE: CONFLICT INFLATION IN THE 1980S-1990S

- *The view of inflation often described as a ‘conflict theory of inflation’ could be seen as a development of Kalecki’s ideas. (Sawyer, 1985, p. 285)*
- *In an almost tautological sense, inflation should be seen as a process of conflict over income shares. (Cardim de Carvalho, 1992, p. 193)*

# DOUBTS ABOUT THE PHILLIPS CURVE

- **Cripps 1977**, p. 110: *Excess demand provides at most only a minor component of a comprehensive explanation.*
- **Cornwall 1983**, p. 78: *There are markets which never clear in the sense that situations of excess demand and supply do not generate wage and price changes of any kind....This theory gives rise to horizontal short-and long-run Phillips curve.*
- **Godley, 1983**, p. 170: *I do not accept that it is a foregone conclusion that inflation rates will be higher if unemployment is lower*

# PK inflation theory is Kaleckian I

- “Generally speaking, changes in the **prices of finished goods are ‘cost-determined’** .
- **The production of finished goods is elastic** as a result of existing reserves of productive capacity. **When demand increases it is met mainly by an increase in the volume of production while prices tend to remain stable...**”
- **(Kalecki 1971, pp. 43-44). . .**

# PK inflation theory is Kaleckian II

- *“The situation with respect to raw materials is different . . . Changes in the prices of raw materials inclusive of primary foodstuffs are ‘demand-determined....*
- *With supply inelastic in short periods, an increase in demand causes a diminution of stocks and a consequent increase in price. The initial price movement may be enhanced by the addition of a speculative element.”* (Kalecki 1971, pp. 43–4)
- We are back to the laws of supply and demand

# PK inflation theory is Kaleckian III: The effect of a rise in world demand for raw materials on the price of finished goods

- “The prices of finished goods are affected, of course, by any ‘demand-determined’ changes in the prices of raw materials **but it is through the channel of costs that this influence is transmitted . .**” (Kalecki 1971, p. 43-44)

PK inflation theory is Kaleckian III : The effect of a rise in the world demand for raw materials on the price of finished goods



# Domestic demand vs world demand

- ‘Primary commodity prices reflect conditions in world markets’ (Bloch et al., 2004, p. 525).
- **Monetary authorities have no or little control over one of the main sources of price inflation in a country – the rising cost of raw materials, since the inflation rate of commodity prices depends on world demand for commodities and not on domestic demand, as argued already by Kaldor (1976).**



# THE ELEMENTARY POST-KEYNESIAN VIEW OF INFLATION (WEINTRAUB 1978, MOORE 1979)

- $p = (1 + m)w / \lambda$  (1)

- where  $w$  is the nominal wage rate,  $\lambda$  is the constant labour productivity and  $m$  is the percentage markup over unit costs. In growth terms, and with the carret signifying the growth rate of a variable, we can determine that the rate of price inflation is equal to the sum of three terms, denoting in order to simplify the computations that

- $\kappa = (1 + m)$

- The rate of price inflation is thus equal to :

- $\dot{p} = \dot{w} + \dot{m} - \dot{\lambda}$  (2)

# PROFIT INFLATION I (VIA HIGH DEMAND)

- Compatible with the earlier ‘neo-Keynesian’ or Cambridge models of growth or distribution (Robinson, Kaldor, Pasinetti) or with the pricing model of Eichner/Wood when capital accumulation increases ( $r = g^T s_p = \pi u_n^T v$ )
- A number of PK economists also claimed that if investment activity rose faster than consumption activity, this would lead to profit inflation in the consumption sector (Weintraub, Minsky, Wray, Graziani, and also Keynes’s *Treatise on Money*). Also a rise in the public deficit to GDP ratio would raise the price of consumption goods. This view today is questioned by most PK economists.

# PROFIT INFLATION II

- Sraffians (Pivetti 1985) and others (L. Taylor 1991, Dutt and Amadeo 1993, Smithin 1996-2009, Hein 2012, Hein 2023) have argued that increases in interest rates **or more precisely in real interest rates** are likely to generate profit inflation by raising the markup (also the cost of lodging goes up in the CPI)
- Profit inflation (as an autonomous rise in the mark-up) has been heavily in the forefront in 2022-2023.
- Greedflation, Mark-up inflation, Sellers' inflation...
- Central bankers and several heterodox economists (Weber and Wasner 2023, Storm 2024, Nikiforos 2024).

- SIMPLEST MODEL OF CONFLICTUAL INFLATION

# DUTT 1987 PLUS (PARTIAL) INDEXATION

$$\hat{w} = \Omega_1 (\omega_w - \omega_{-1}) + \Omega_2 \hat{p}_{-1}$$

$$\hat{p} = \Psi_1 (\omega_{-1} - \omega_f) + \Psi_2 \hat{w}$$

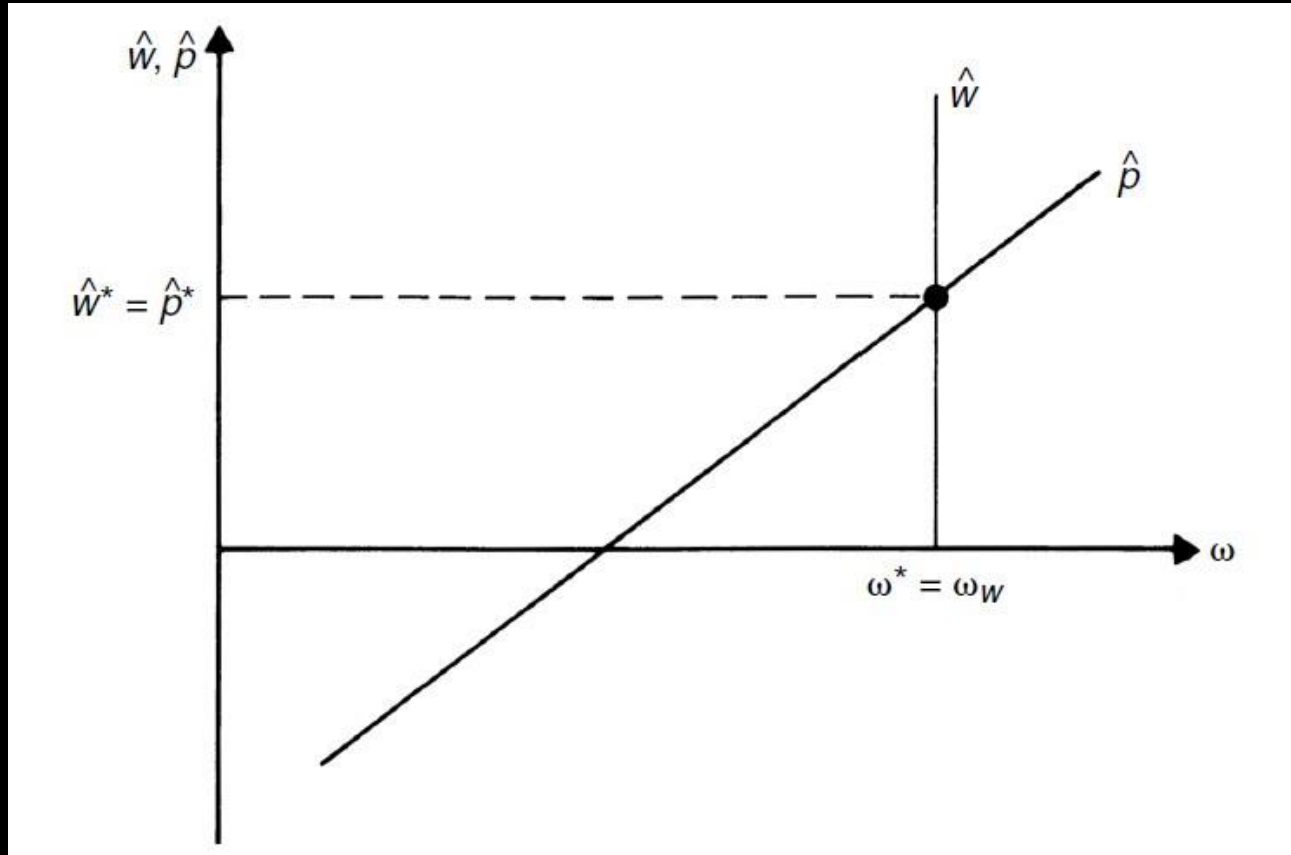
$$\omega^* = (\Omega \omega_w + \Psi \omega_f) / (\Omega + \Psi)$$

where  $\Omega = \Omega_1 / (1 - \Omega_2)$  and where  $\Psi = \Psi_1 / (1 - \Psi_2)$ .

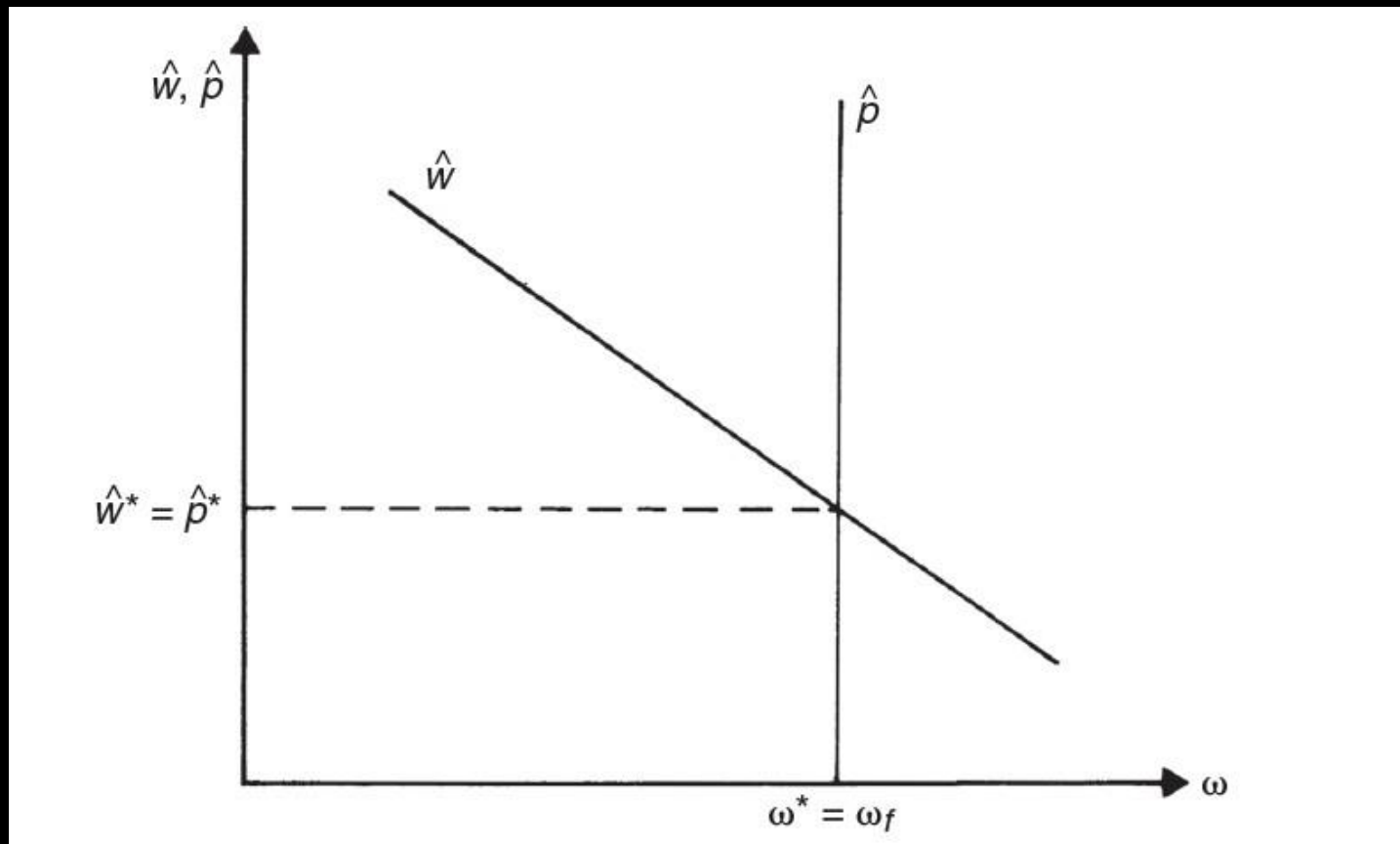
$$\hat{w} = \hat{p} = \frac{\Omega \Psi (\omega_w - \omega_f)}{\Omega + \Psi} = \frac{\Omega_1 \Psi_1 (\omega_w - \omega_f)}{\Omega_1 (1 - \Psi_2) + \Psi_1 (1 - \Omega_2)}$$

Here expressed in real wages or wage shares; alternatively could be expressed in terms of profit shares

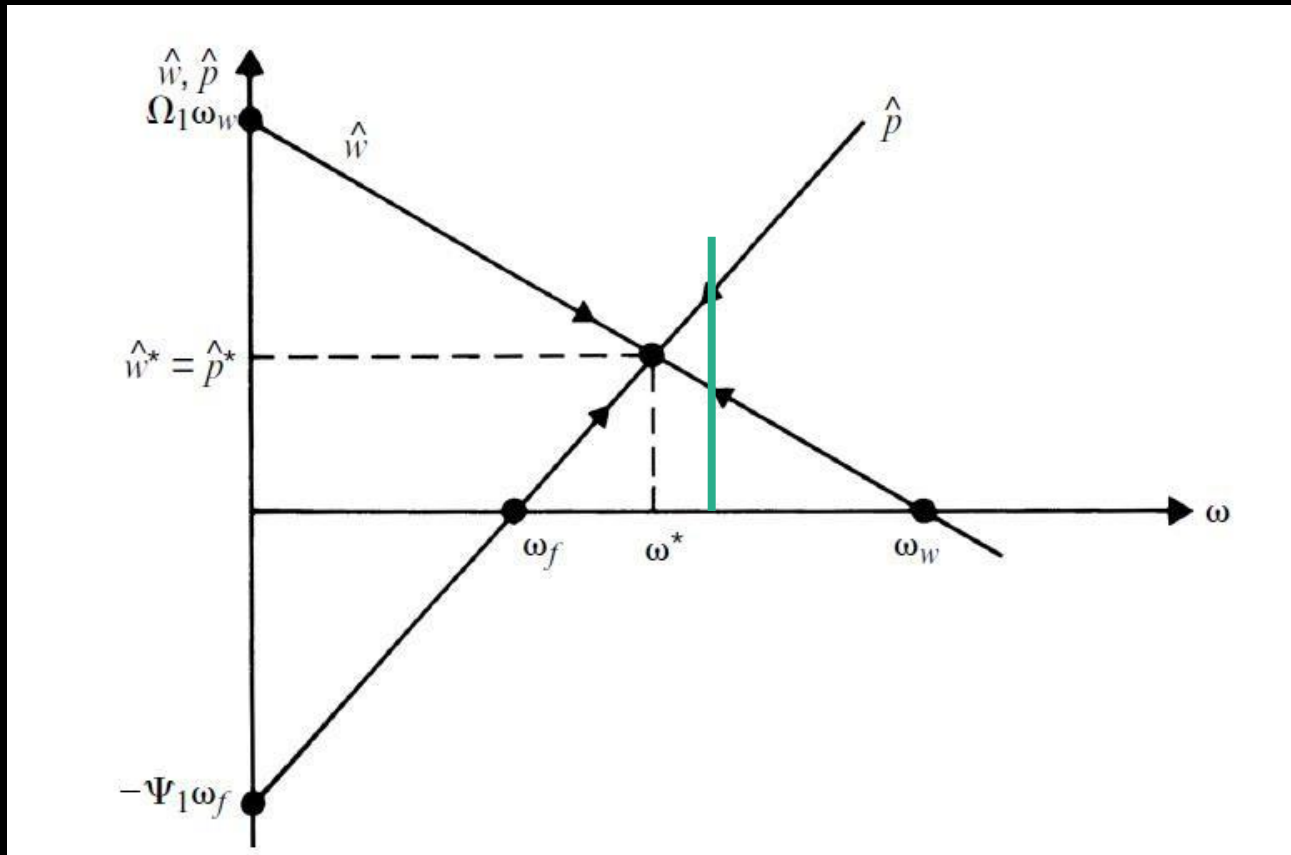
**THE INFLATION BARRIER, WHERE ‘ORGANISED LABOUR HAS THE POWER TO OPPOSE ANY FALL IN THE REAL-WAGE RATE’ (ROBINSON, 1962, P. 58).**



# FIRMS HAVE ABSOLUTE BARGAINING POWER

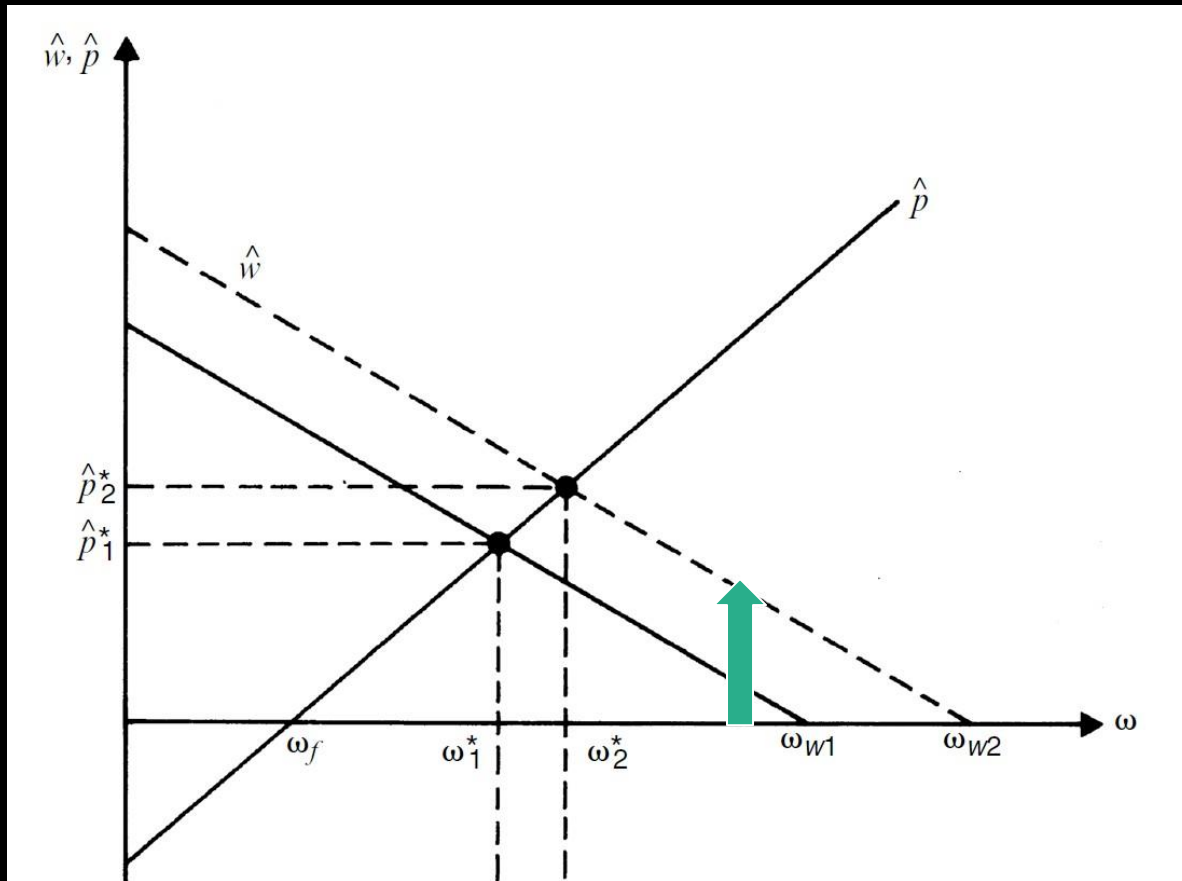


# THE GENERAL CASE

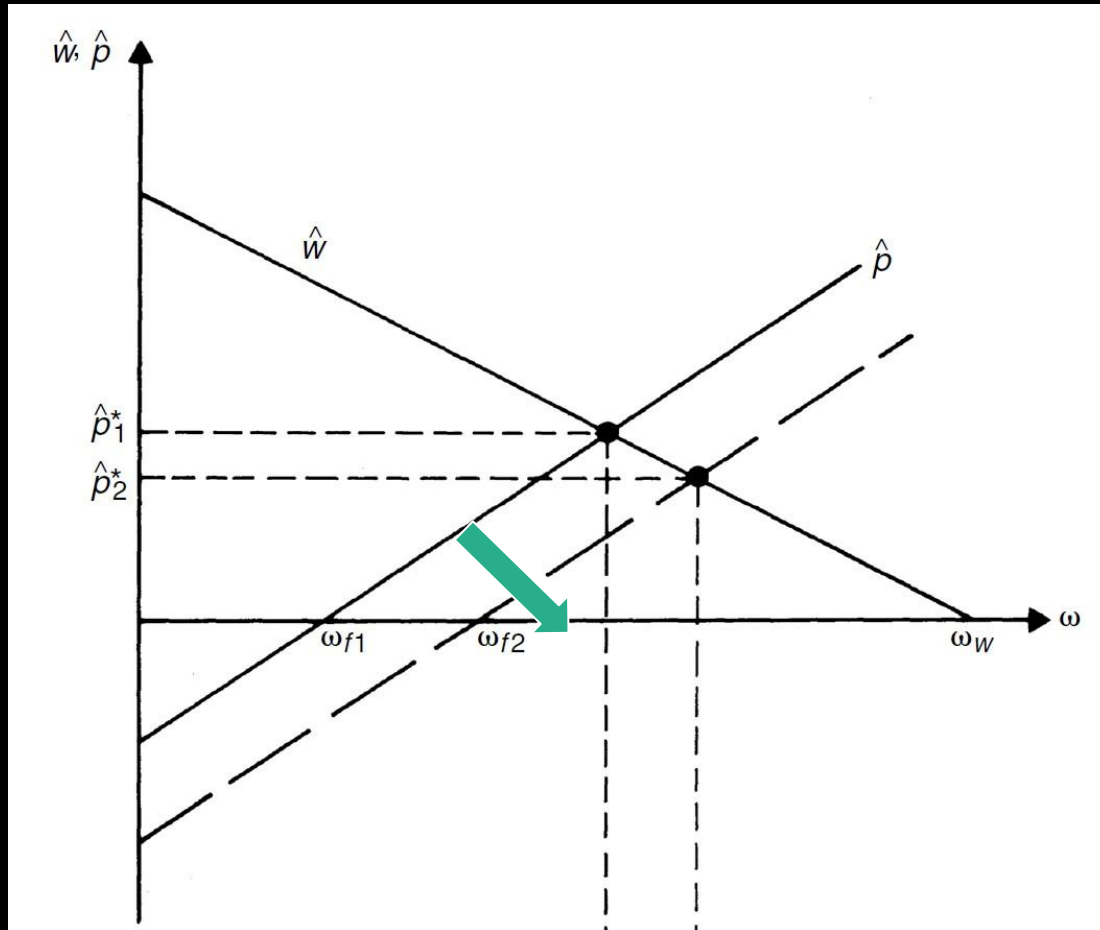




# WORKERS SET THEMSELVES A HIGHER REAL WAGE TARGET



# WHAT GOVERNMENTS WOULD LIKE TO ACHIEVE BY PRESSURING COMPANIES TODAY



- WAGE-WAGE INFLATION AND PRODUCTIVITY-LED INFLATION

# WAGE-WAGE INFLATION

$$\hat{w} = \Omega_1 (\omega_w - \omega) + \Omega_{ww}$$

- “In other words, the struggle about money-wages primarily affects the *distribution* of the aggregate real wage between different labour-groups . . . . The effect of combination on the part of a group of workers is to protect their *relative* real wage.” (Keynes, 1936, p. 14)
- *The causes of movements in money-wages are bound up with the competition of different groups of workers to maintain or improve their relative positions.* (Robinson 1962, p. 70).
- **The main cause of inflation** *is the competitive struggle between trade unions and different sections of labour, exacerbated by the absence of an agreement about relative wages* (Kahn 1958/1972, p. 143).
- Trevithick 1976; Wood 1978; Cornwall 1983; Reynolds 1989
- Industrial relations: Dunlop, Thurow, Doeringer.

# PRODUCTIVITY-LED INFLATION

- *Considerable empirical evidence now exists to suggest that higher money wage settlement may first take in those industries which are placed in particularly favourable economic circumstances. Thus in industries with an exceptionally high growth in labour productivity ... higher money wage settlements may take place first. Then comes into the 'propagation effect' of a wage-wage spiral which tries to restore the relative money wage structure. (Bhaduri 1986, p. 199)*
- Cf Hicks (1955); cf Baumol's disease?

- THE PHILLIPS CURVE

# TWO PK TRADITIONS IN MODELLING CONFLICTUAL INFLATION

- **There exists a NAIRU** with the acceleration hypothesis: there is a relationship between unexpected inflation and the rate of unemployment (or employment);
  - **Rowthorn 1977**, Stockhammer 2008, Hein and Stockhammer 2010, Hein 2023, Hein and Häusler 2024, Palley 2023
- **There is no NAIRU**: there might be a relationship between the rate of inflation and the rate of (un)employment;
  - **Dutt 1987**, Taylor 1985, Dalziel 1990, Sarantis 1990-91, Lavoie 1992-2014-2022, 2024, Casetti 2003, Setterfield 2006, Blecker and Setterfield 2019, Brochier 2020

# HEIN-STOCKHAMMER (HS) APPROACH I

- The basic HS models have several similarities with the wage-setting and price-setting (WS-PS) New Keynesian models of Blanchard and of Carlin and Soskice (2015) – but are different regarding the endogeneity of the NAIRU and of distribution
- In contrast to the Dutt models where inflation stabilizes even though the conflict is never resolved, **in the basic HS conflicting-claims model, there is the accelerationist thesis**, that is, inflation accelerates as long as the actual rate of unemployment is lower than the NAIRU, that is, as long as the target real wage of workers is higher than that of firms.



# HEIN-STOCKHAMMER NAIRU APPROACH II

- Out of equilibrium, the two income-share targets are incompatible. **Unexpected** inflation (the **change** in the inflation rate) makes them temporarily compatible.
- **Unexpected inflation** and unemployment have an inverse relationship.
- Inflation gets stabilized when the real-wage (or wage share) target of workers is equal to the real-wage target of firms (compatible with their target profit share).
- In the Palley 2023 model, there is a flat NAIRU segment.
- In the basic HS model, unexpected inflation affects aggregate demand and makes the NAIRU unstable – and also potentially endogenous

- MODELLING WITHIN AN OPEN ECONOMY

# FULLY-INTEGRATED VERSUS OPEN ECONOMY

- In a fully-integrated closed economy, everything can be brought back to wages and profits
- **At the level of the firm**, labour costs are not the only direct costs faced by firms. Firms also face material costs, in particular the cost of intermediate goods. So unit direct costs  $UDC$  include unit direct labour costs and unit material costs (Sylos-Labini 1979)
- We thus have  $UDC = UDLC + UMC$
- **At the level of the economy**, to the wage costs we must add the cost of *imported* materials. At the macroeconomic level, in this open economy,  $UMC$  thus represents the unit imported material cost. The markup pricing equation is then:
- $p = (1 + m)(UDLC + UMC) = (1 + m)\left(\frac{w}{\lambda_d} + ep_f v\right)$

$$p = (1 + m) \left( \frac{w}{\lambda_d} + ep_f v_m \right)$$

Following the arguments of Reynolds (1989, ch. 9) and the algebra of Hein and Vogel (2008) and Hein (2023):

Besides the passthrough, the increase in the cost of imported materials may thus depend on three factors:

- A depreciation of the exchange rate of the domestic currency (an increase in the value of the exchange rate variable  $e$ );
- A rise in the prices of commodities  $p_f$  as measured in the currency of the foreign producers;
- An increase in the real amount of imported raw material  $v_m$  which is required per unit of production.

# THE PK VIEW OF INFLATION, WITH (IMPORTED) RAW MATERIALS AND INTERMEDIATE GOODS

- With  $j = UMC/UDLC$ , that is the unit material cost relative to the unit direct labour cost, the pricing equation then becomes:

$$\bullet p = \frac{1 + m}{\lambda_d} (UDLC + UMC) = \frac{1 + m}{\lambda_d} (1 + j) UDLC =$$

$$\bullet p = (1 + m)(1 + j) \left(\frac{1}{\lambda_d}\right)$$

# WHAT IF *UMC* RISES FASTER THAN *UDLC*

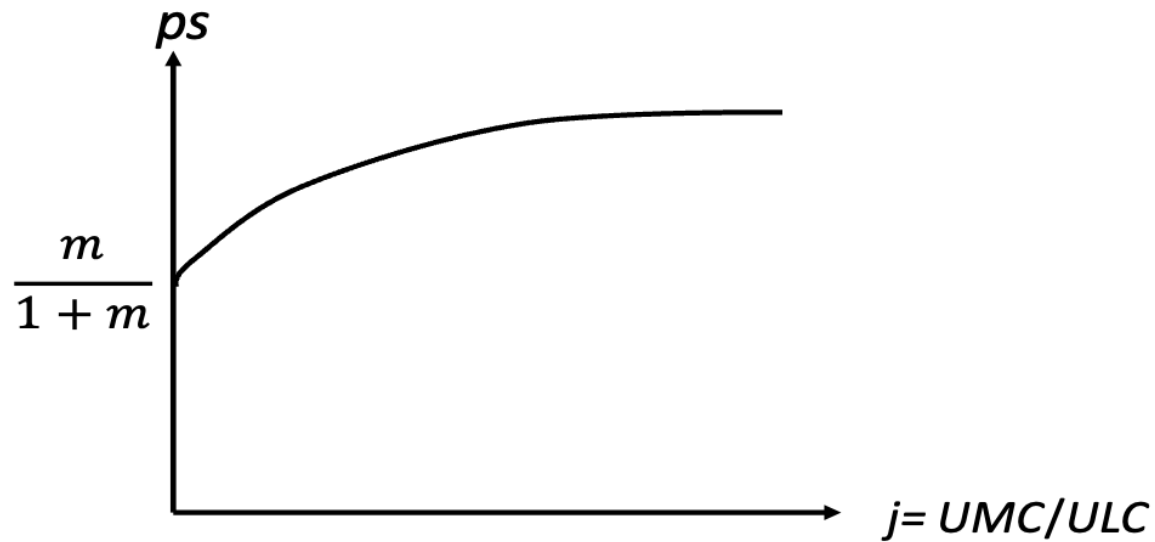
- Omitting overhead labour, the profit share in value added rises with  $j$ :

$$ps = \frac{m(1+j)}{(1+m)(1+j)}$$
$$\frac{dps}{dj} = \frac{m}{D^2} > 0$$

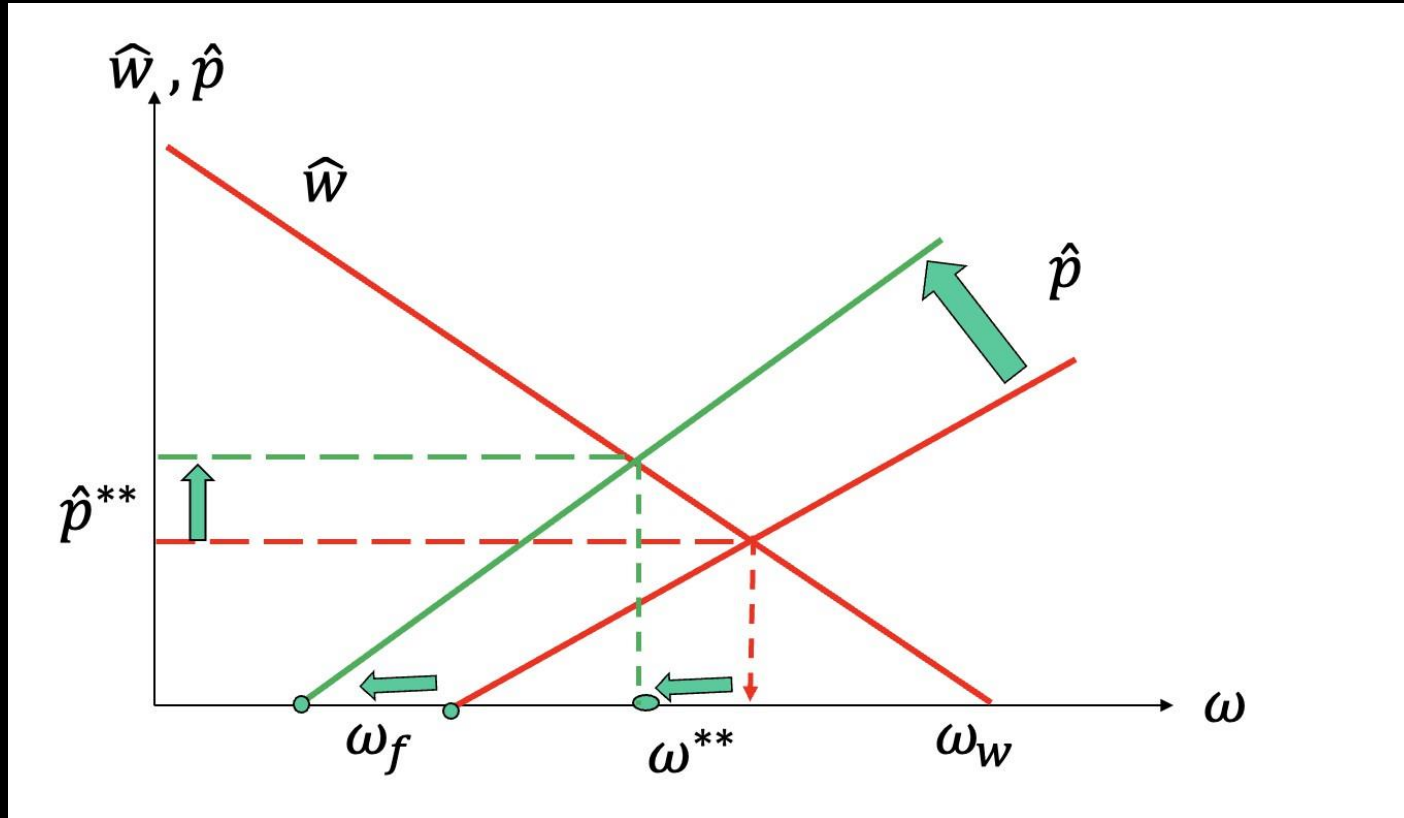
*A rise in the degree of monopoly or in raw material prices in relation to unit wage costs causes a fall in the relative share of wages in value added. (Kalecki 1971, p. 63)*

$$\frac{w}{p} = \frac{\lambda_d}{(1+m)(1+j)}$$

# THE RELATIVE PRICE OF MATERIALS CORRELATES WITH THE PROFIT SHARE (CASTRO-VINCENZI/KLEINMAN 2022)



# THE IMPACT OF A RISE IN $J = UMC / UDLC$





# A SRAFFIAN CONFLICTUAL (SIMPLIFIED) ALTERNATIVE (MORLIN 2021)

$$p_i = (a_1 p_i)(1 + r_i) + w/\lambda_i \quad (1) \text{ Investment material good, tradable}$$

$$p_c = (a_2 p_i)(1 + r_c) + w/\lambda_c \quad (2) \text{ Consumption good, non-tradable}$$

$$p_i = p_i \quad (3) \text{ World price: the law of one price applies to tradables.}$$

$$e p_i^f = r_c = r \quad (4) \text{ Uniform rates of profit}$$

$$r_i^{**} = \frac{1 - a_1}{a_1} - \frac{w/\lambda_i}{a_1}$$

- Currency depreciation (a rise in  $e$ ) leads to a rise in  $p_i$  and hence in  $r_i$ , and therefore in a rise in  $p_c$  and  $r_c$ , and thus to a fall in the real wage  $w/p_c$
- This is equivalent to a fall in the real wage target of firms  $\omega_f$
- As in the Kaleckian model, currency depreciation generates a rise in the inflation rate (and a fall in the realized real wage).

# HIGH AND HYPER INFLATION

- For mainstream economists, regimes of high inflation or of hyperinflation are obvious instances of too much money chasing too few goods.
- There is long-held tradition in post-Keynesian economics that argues otherwise.
- **High inflation and Hyperinflation are said to be the consequence of a distributive conflict associated with a brisk fall in real wages, with money wages trying to catch up, usually following a strong (external) negative shock.**
- **Robinson (1938), Burdekin and Burkett (1992), Cardim de Carvalho (1992), Câmara/Vernengo (2001), Charles/Marie (2016), Bastian/Setterfield (2020), Bastian/Charles/Marie (2024)**

# AUTOMATIC INDEXATION LEADING TO HIGH INFLATION RATES

- As warned by several authors (Carvalho 1992, Godley and Cripps 1983, Taylor 1991), faster rates of inflation with only partial indexation quickly erode the bargained real wage, so that realized real wages fall. **Labour unions ask for more systemic indexation rules, and shortened indexation intervals** (Serrano, Summa, Morlin 2024).

- $\dot{\omega} = \Omega_1 (\omega_w - \omega) + \Omega_2 p \xi_1$

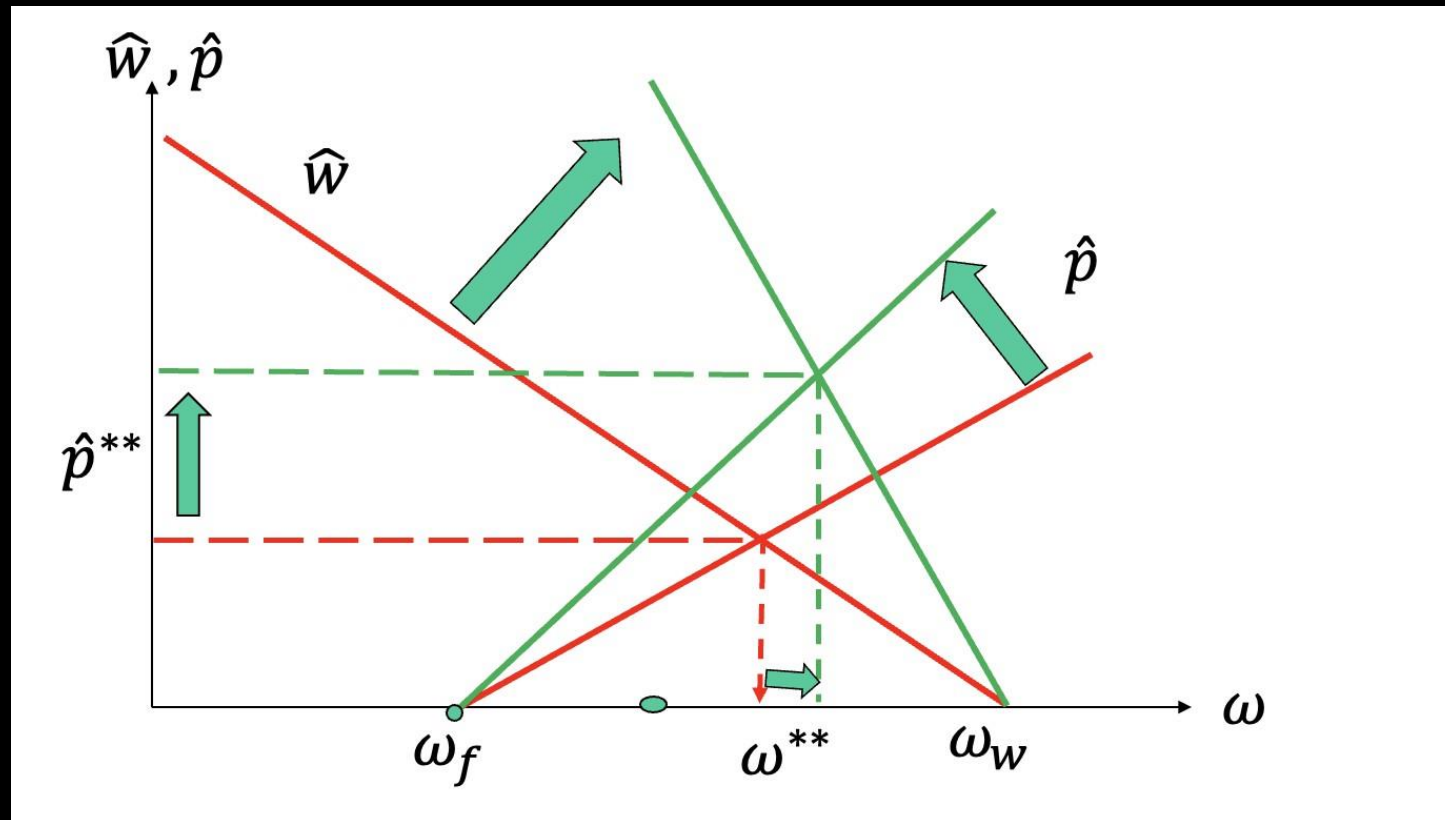
- $p \xi = \Psi_1 (\omega - \omega_f) + \Psi_2 \dot{\omega}$

- Then, Bastian/Setterfield 2020:

- $\dot{\Omega}_2 = f_{\Omega} [\omega_w - (\omega^* + \epsilon)]$

Then, however, firms may decide to retaliate, and react more strongly to change in wage inflation, in which case we would have:  $\dot{\Psi}_2 = f_{\Psi} \dot{\Omega}_2$

# FASTER WAGE INDEXATION OR MORE FREQUENT CHANGES IN WAGES+PRICES FEED INFLATION



# MOVING TOWARDS HYPERINFLATION

- Firms stop from setting prices on the basis of historical costs or normal costs, and **start setting them based on expected future costs.**
- How can these be assessed?
- Since (indexed) wage costs end up rising as fast as imported material costs, with ever shorter adjustment periods, *the new adjustment index has been the exchange rate to the dollar* (Carvalho 1992, p. 200; Bastian/Charles/Marie 2024).
- $\pi^e = \Omega_1 (\omega_w - \omega) + \Omega_2 p \bar{\epsilon}_1 + \Omega_3 \pi^e$
- $p \bar{\epsilon} = \Psi_1 (\omega - \omega_f) + \Psi_2 \pi^e + \Psi_3 \pi^e$
- There is a dissolving trust vis-à-vis the domestic currency: a spontaneous move towards dollarization which makes matters worse.

THANK YOU.

QUESTIONS?