

**Is aggregate demand wage-led or  
profit-led?**

**National and global effects**

**(Is a Wage-led Recovery Feasible  
after the Crisis? )**

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(with Giorgos Galanis)

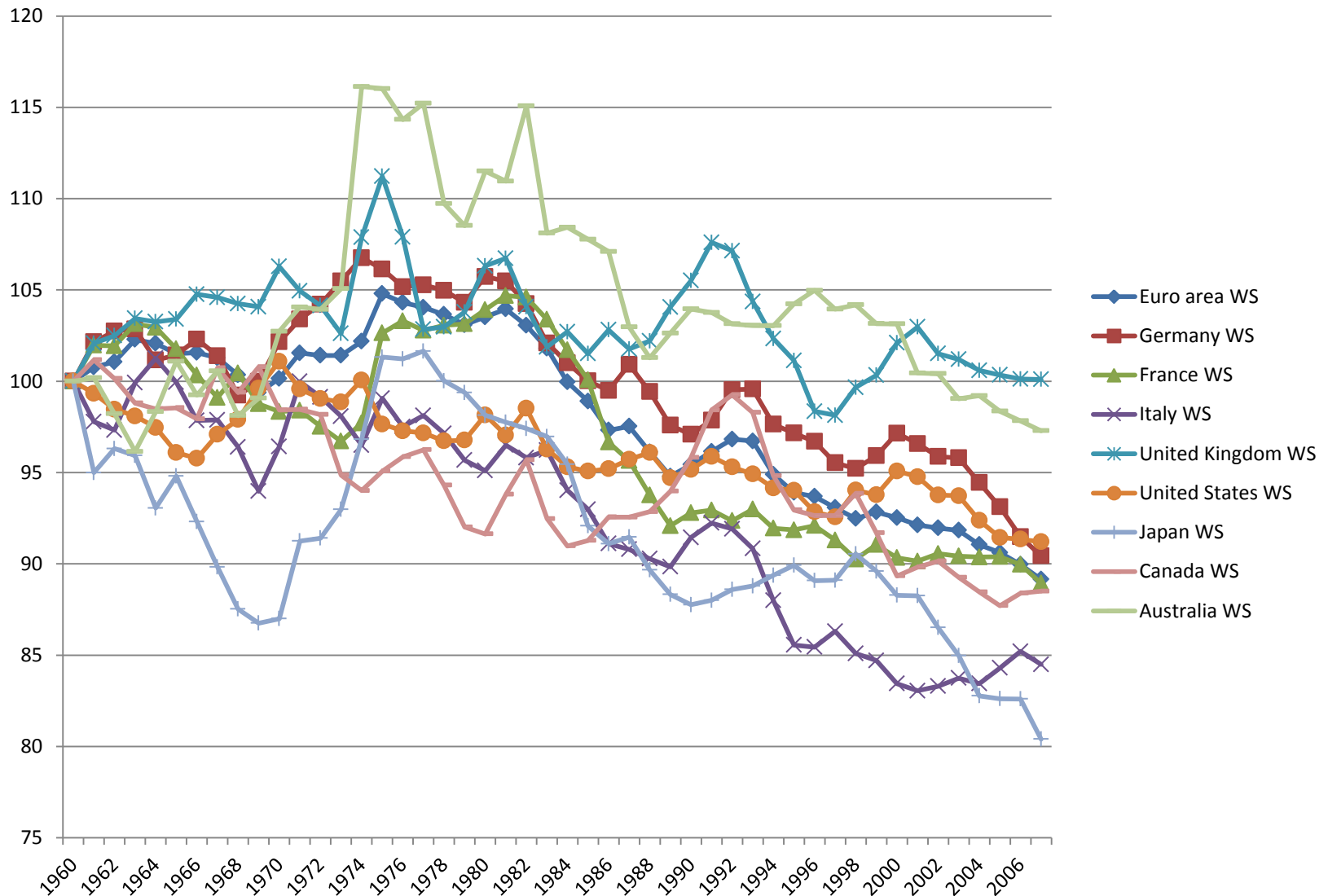
# Outline

- Stylized facts
- Model
- Estimation results
  - G20 (data only for 16 countries)
  - Novelty: global multiplier
    - Effects of trade partners' profit share via changes in
      - import prices
      - trade partners' GDP
- Policy Conclusions

# Income Distribution

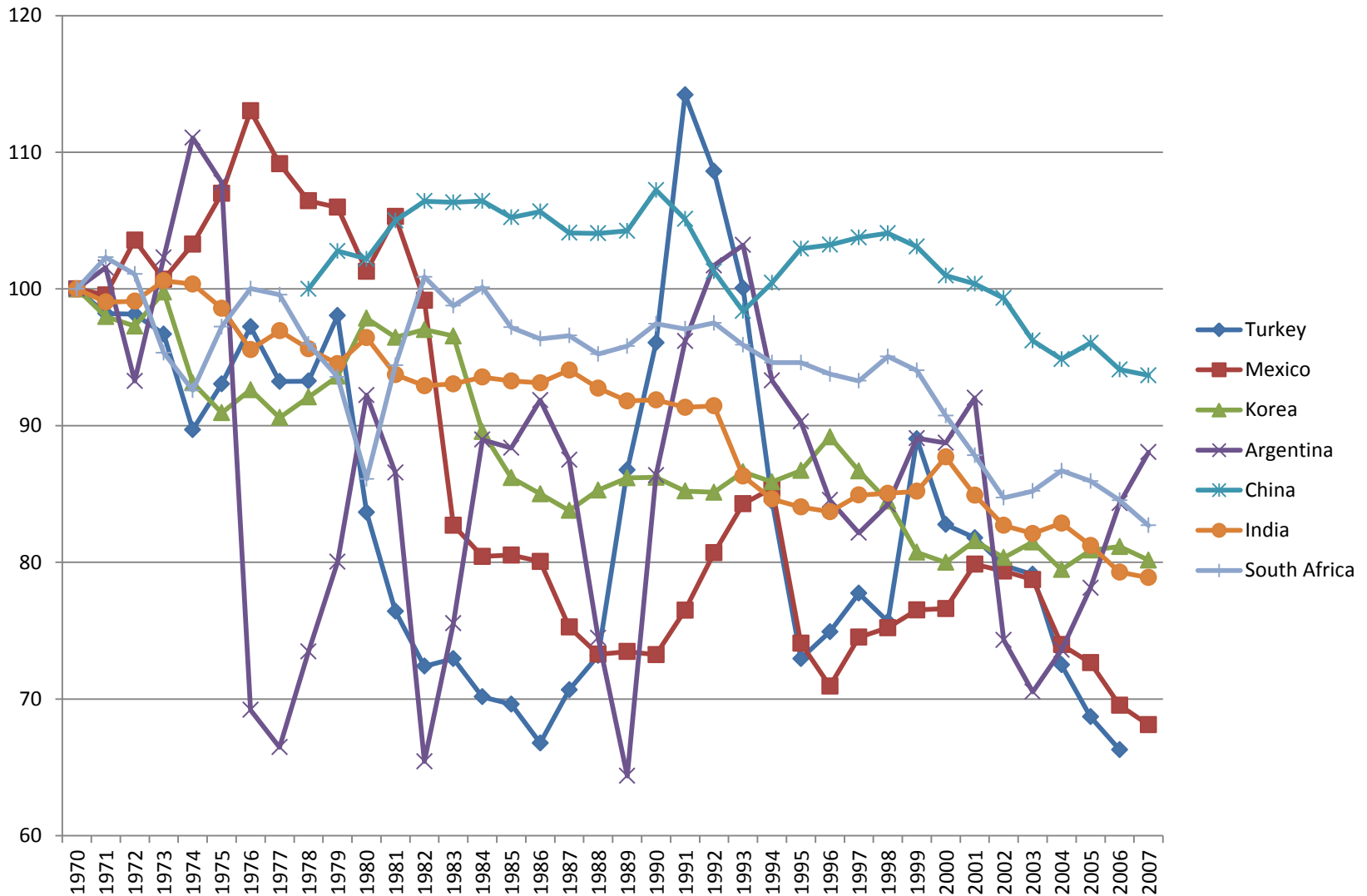
- $Y_f$  =GDP at factor cost  
=GDP-taxes on production & imports+subsidies  
=W+R
- W: Adjusted labour compensation
  - compensation per employee\*Total employment
  - Particularly important for the DCs; informal, self-employed
- R: adjusted gross operating surplus = $Y_f - W$
- $\pi$ =Adjusted profit share=  $R/Y_f$
- Adjusted wage share= $WS = W/Y_f = 1$

# Adjusted wage share



\*Adjusted labour share= compensation per employee\*Total employment/GDP at factor cost

# Adjusted wage share



\*Adjusted labour share= compensation per employee\*Total employment/GDP at factor cost

## Average growth of GDP (%)

	Euro area-12	Germany	France	Italy	UK	US	Japan	Canada	Australia
1961-69	5.30	4.39	5.71	5.77	2.90	4.69	10.14	5.37	5.53
1970-79	3.78	3.27	4.15	4.02	2.42	3.32	5.21	4.11	3.07
1980-89	2.27	1.96	2.31	2.55	2.48	3.04	4.37	3.04	3.35
1990-99	2.15	2.32	1.86	1.43	2.24	3.21	1.46	2.44	3.32
2000-07	2.13	1.53	2.10	1.46	2.73	2.61	1.73	2.92	3.31

	Turkey	Mexico	Korea	Argentina	China	India	South Africa
1970-79	4.86	6.41	10.27	2.92	6.11	2.68	3.03
1980-89	4.08	2.21	8.62	-0.73	9.75	5.69	2.24
1990-99	4.02	3.38	6.68	4.52	9.99	5.63	1.39
2000-07	5.23	3.06	5.20	3.51	10.51	7.26	4.30

# Income distribution and the macro economy

- What is the effect of a wage cut on demand?
    - National
    - Global – simultaneous decrease in the wage share
  - Neoclassical/'mainstream'
    - Positive; wages merely as a cost item
  - Neo-Kaleckian model
  - Increase in the profit share: + & - effects on aggregate demand
    - : the relative size of the consumption differential out of wage vs. profit income
    - +: the sensitivity of investment to profits (partial)
    - +: the sensitivity of net exports to unit labor costs
- Total effect on demand is ambiguous
- : wage-led demand
  - +: profit-led demand
    - Bhaduri and Marglin (1990); Dutt (1984); Blecker (1989)

## Consumption (C)

$$C = c_0 + c_w W + (c_\pi) R$$

$c_w$  marginal propensity to consume out of wages

$c_\pi$  marginal propensity to consume out of profits

$$c_\pi < c_w$$

Add Yagriculture for the DCs if significant

## Private Investment (I)

$$I = i_A + i_Y Y + i_\pi \pi$$

Add I/government (contemp & 1<sup>st</sup> lag) & Yagriculture for the DCs if significant



# Foreign sector

- stepwise approach
- domestic prices=f(nominal unit labor costs, import prices)
- export prices =f(nominal unit labor costs, import prices)
- Exports= f(export price/import price, Y<sub>rw</sub>)
- Imports=f(domestic price/import price, Y)

$$\frac{\partial X / Y}{\partial (WS)} = \left( \frac{\partial X}{\partial P_x} \frac{\partial P_x}{\partial (ulc)} \frac{\partial (ulc)}{\partial (rulc)} \frac{\partial (rulc)}{\partial (ws)} \right) \frac{X / Y}{rulc}$$

$$= \left( e_{XP_x} e_{P_x ULC} \frac{1}{1 - e_{P ULC}} \frac{Yf}{Y} \right) \frac{X / Y}{rulc}$$

- real unit labor costs=wage share\*GDP at factor cost/GDP
- nominal unit labor costs=P\*real unit labor costs
- Except Turkey, Mexico, South Africa exports=f(rulc); otherwise insignificant
- X, M: exchange rate mostly insign<sub>9</sub>

# National and Global Multiplier effects

$$\begin{bmatrix} \Delta Y \\ Y \end{bmatrix}_{n \times 1} = \begin{bmatrix} \Delta Y_1 \\ Y_1 \\ \vdots \\ \Delta Y_n \\ Y_n \end{bmatrix} = E_{n \times n} \begin{bmatrix} \Delta \pi_1 \\ \vdots \\ \Delta \pi_n \end{bmatrix} + P_{n \times n} \begin{bmatrix} \Delta \pi_1 \\ \vdots \\ \Delta \pi_n \end{bmatrix} + H_{n \times n} \begin{bmatrix} \Delta Y_1 \\ Y_1 \\ \vdots \\ \Delta Y_n \\ Y_n \end{bmatrix} + (W_{n \times n}) \begin{bmatrix} \Delta Y_1 \\ Y_1 \\ \vdots \\ \Delta Y_n \\ Y_n \end{bmatrix}$$

$$E_{n \times n} = \begin{bmatrix} \frac{\Delta C}{Y_1} + \frac{\Delta I}{Y_1} + \frac{\Delta NX}{Y_1} & 0 & \dots & 0 \\ \Delta \pi_1 & \vdots & \vdots & \vdots \\ 0 & \dots & \dots & \vdots \\ \vdots & \dots & \dots & \vdots \\ 0 & \dots & \dots & \frac{\Delta C}{Y_n} + \frac{\Delta I}{Y_n} + \frac{\Delta NX}{Y_n} \\ & & & \Delta \pi_n \end{bmatrix} \quad P_{n \times n} = \begin{bmatrix} 0 & \frac{\Delta NX}{Y_1} M_{21} & \dots & \frac{\Delta NX}{Y_1} M_{n1} \\ \frac{\Delta NX}{Y_2} M_{12} & \Delta \pi_2 M_1 & \dots & \frac{\Delta NX}{Y_2} M_{n2} \\ \vdots & 0 & \dots & \vdots \\ \frac{\Delta NX}{Y_n} M_{1n} & \frac{\Delta NX}{Y_n} M_{2n} & \dots & 0 \\ \Delta \pi_1 M_n & \Delta \pi_2 M_n & \dots & \vdots \end{bmatrix}$$

$$H_{n \times n} = \begin{bmatrix} \frac{\delta C_1}{\delta Y_1} + \frac{\delta I_1}{\delta Y_1} - \frac{\delta M_1}{\delta Y_1} & 0 & \dots & 0 \\ 0 & \vdots & \vdots & \vdots \\ \vdots & \dots & \dots & \vdots \\ 0 & \dots & \dots & \frac{\delta C_n}{\delta Y_n} + \frac{\delta I_n}{\delta Y_n} - \frac{\delta M_n}{\delta Y_n} \end{bmatrix} \quad W_{n \times n} = \begin{bmatrix} 0 & e_{XY_{rw}^1} \frac{X_1 Y_2}{Y_1 Y_w} & \dots & e_{XY_{rw}^1} \frac{X_1 Y_n}{Y_1 Y_w} \\ e_{XY_{rw}^2} \frac{X_2 Y_1}{Y_2 Y_w} & 0 & \dots & e_{XY_{rw}^2} \frac{X_2 Y_n}{Y_2 Y_w} \\ \vdots & \dots & \vdots & \vdots \\ e_{XY_{rw}^n} \frac{X_n Y_1}{Y_n Y_w} & e_{XY_{rw}^n} \frac{X_n Y_2}{Y_n Y_w} & \dots & 0 \end{bmatrix}$$

## Global Multiplier

$$\begin{bmatrix} \frac{\Delta Y_1}{Y_1} \\ \vdots \\ \frac{\Delta Y_n}{Y_n} \end{bmatrix} = (I_{n \times n} - H_{n \times n} - W_{n \times n})^{-1} (E_{n \times n} + P_{n \times n}) \begin{bmatrix} \Delta \pi_1 \\ \vdots \\ \Delta \pi_n \end{bmatrix}$$

# Estimation strategy

- Single equation approach
- Lag structure: contemporaneous & 1 lag, keeping only significant vars with the expected sign
- Test cointegration; if no cointegration, SR estimation in differences
- DATA: annual, 1960/70-2007; AMECO, OECD, WB, ILO, MOSPI, UNIDO, China National Statistics Office, Molero Simarro 11, Lindenboim et al 11,

# The effects of a 1%-point increase in the profit share

Wage led

	C/Y	I/Y	X/Y	M/Y	NX/Y	% change in total private excess demand
Euro zone-12	-0.439	0.299	0.057	0.000	0.057	-0.084
Germany	-0.501	0.376	0.096	0.000	0.096	-0.029
France	-0.305	0.088	0.036	-0.162	0.198	-0.020
Italy	-0.356	0.130	0.037	-0.089	0.126	-0.100
United Kingdom	-0.303	0.120	0.048	-0.110	0.158	-0.025
United States	-0.426	0.000	0.006	-0.031	0.037	-0.388
Japan	-0.353	0.284	0.028	-0.026	0.055	-0.014
Canada	-0.326	0.182	0.063	-0.203	0.266	0.122
Australia	-0.256	0.174	0.049	-0.223	0.272	0.190

## The effects of a 1%-point increase in the profit share

	C/Y	I/Y	X/Y	M/Y	NX/Y	% change in total private excess demand
Turkey	-0.491	0.000	0.140	-0.144	0.283	-0.208
Mexico	-0.438	0.153	0.128	-0.253	0.381	0.096
Korea	-0.422	0.000	0.178	-0.181	0.359	-0.063
Argentina	-0.153	0.015	0.014	-0.178	0.192	0.054
China	-0.412	0.000	1.095	-0.891	1.986	1.574
India	-0.291	0.000	0.080	-0.230	0.310	0.018
South Africa	-0.145	0.129	0.000	-0.506	0.506	0.490

Table 10 Elasticities of C, I, and M with respect to Y

	$e_{CY}$	$e_{YI}$	$e_{MY}$	<b>h</b>	Multiplier
Euro area-12	0.551	1.020	2.035	0.371	1.590
Germany	0.516	0.913	1.911	0.071	1.076
France	0.494	2.050	1.963	0.280	1.388
Italy	0.539	2.610	2.136	0.422	1.730
United Kingdom	0.579	1.311	1.859	0.167	1.200
United States	0.387	3.105	1.996	0.519	2.080
Japan	0.464	1.840	1.136	0.584	2.407
Canada	0.499	1.780	1.505	0.176	1.214
Australia	0.324	2.021	1.886	0.291	1.410
Turkey	0.457	3.343	1.684	0.547	2.208
Mexico	0.471	1.406	2.591	0.097	1.108
Korea	0.725	2.509	2.265	0.452	1.824
Argentina	0.508	0.894	2.868	0.276	1.381
China	0.553	1.664	1.501	0.137	1.159
India	0.639	1.561	1.075	0.541	2.180
South Africa	0.632	1.176	1.199	0.214	1.272

$$h = e_{CY} \frac{C}{Y} + e_{YI} \frac{I}{Y} - e_{MY} \frac{M}{Y}$$

# Summary of the multiplier effects at the national and global level

	The effect of a 1%-point increase in the profit share in only one country on private excess demand/Y	The effect of a 1%-point increase in the profit share in only one country on % change in aggregate demand (A*multiplier)	The effect of a simultaneous 1%-point increase on private excess demand/Y (includes effects of changes in Pm)	The effect of a simultaneous 1%-point increase on the % change in aggregate demand (C*multiplier (including effects of Yrw))
	A	B	C	D
Euro area-12	-0.084	-0.133	-0.119	-0.245
United Kingdom	-0.025	-0.030	-0.107	-0.214
United States	-0.388	-0.808	-0.426	-0.921
Japan	-0.014	-0.034	-0.043	-0.179
Canada	0.122	0.148	-0.020	-0.269
Australia	0.190	0.268	0.122	0.172
Turkey	-0.208	-0.459	-0.325	-0.717
Mexico	0.096	0.106	0.025	-0.111
Korea	-0.063	-0.115	-0.161	-0.864
Argentina	0.054	0.075	0.022	-0.103
China	1.574	1.932	1.289	1.115
India	0.018	0.040	-0.012	-0.027
South Africa	0.490	0.729	0.356	0.390

global GDP ↓ by 0.36%



## A wage-led recovery scenario (Onaran and Galanis 2012)

	Scenario 2	
	Change in profit share	The % change in aggregate demand (includes national and global multiplier effects, i.e. changes in Pm and Yrw)
Euro area-12	-11.05	2.36
United Kingdom	-7.83	1.91
United States	-6.31	6.15
Japan	-16.71	1.49
Canada	-3.00	2.84
Australia	-3.00	0.03
Turkey	-18.41	10.81
Mexico	-3.00	1.45
Korea	-8.64	7.46
Argentina	-3.00	1.27
China	-1.00	5.56
India	-3.00	0.43
South Africa	-1.00	1.93

Global GDP↑ by 3.05%

Source: Onaran and Galanis (2012)

# Conclusion

- Domestic demand (consumption+investment) is wage-led (for both the developed and developing countries).
- Large/relatively closed economies are rather wage-led
  - ↑ wage share : egalitarian; does not harm growth potential
- Global simulation: the limits of strategies of international competitiveness based on wage competition in a highly integrated global economy
- Some profit-led economies also contract as an outcome of race to the bottom (Canada, India, Mexico and Argentina)
- Macro – micro conflict
  - firm vs. aggregate & national vs. European/global
- Wage/macro policy coordination and avoid beggar thy neighbor policies
- Developing countries: Space for domestic-demand led & more equal growth
  - Alternative to pure export-led growth ; south-south cooperation
- Recovery led by domestic demand & ↑ in the wage share
  - a reversal of the ↑ inequality –a factor behind the crisis
- However: limits to increasing wage share and full employment in capitalism
  - Solution of the realization crisis → profit squeeze
  - But we are not there yet...

	<b>Domestic D</b>		<b>Total D</b>	
	<b>wage-led</b>	<b>Profit-led</b>	<b>wage-led</b>	<b>Profit-led</b>
Euro area	Onaran & Galanis 11 Stockhammer, Onaran, Ederer09		Onaran & Galanis 11 Stockhammer, Onaran, Ederer09	
Germany	Onaran & Galanis 11 Stockhammer, Hein, Grafl 11, Stockhammer & Stehrer 11 Bowles & Boyer 95, Naastepad & Storm 07, Hein & Vogel 08,		Onaran & Galanis 11 Stockhammer, Hein, Grafl 11, Naastepad & Storm 07, Hein & Vogel 08,	Bowles & Boyer 95
France	Onaran & Galanis 11 Bowles & Boyer 95, Naastepad & Storm 07, Ederer & Stockhammer 07 Hein & Vogel 08, Stockhammer & Stehrer 11		(Stockhammer, Onaran 04), Naastepad & Storm 07, Hein & Vogel 08HV08 Onaran & Galanis 11	Bowles & Boyer 95, Ederer & Stockhammer 07
Italy	Onaran & Galanis 11 Naastepad & Storm 07		Onaran & Galanis 11 Naastepad & Storm 07	
NL	Naastepad & Storm 07, Stockhammer & Stehrer 11	Hein & Vogel 08	Naastepad & Storm 07	Hein & Vogel 08
Austria	Stockhammer & Ederer 08 Hein & Vogel 08, Stockhammer & Stehrer 11			Stockhammer & Ederer 08 Hein & Vogel 08
UK	Onaran & Galanis 11 Bowles & Boyer 95, Naastepad & Storm 07 Hein & Vogel 08	Stockhammer & Stehrer 11	Onaran & Galanis 11 Bowles & Boyer 95, Naastepad & Storm 07, Hein & Vogel 08	
US	Onaran & Galanis 11 Onaran, Stockhammer, Grafl 11, Bowles & Boyer 95, Hein & Vogel 08, (Stockhammer & Stehrer 11 )	Naastepad & Storm 07	Onaran & Galanis 11 Onaran, Stockhammer, Grafl 11 Bowles & Boyer 95, Hein & Vogel 08,	(Stockhammer, Onaran 04), Naastepad & Storm 07, Barbosa-Filho & Taylor 08
Japan	Onaran & Galanis 11 Bowles & Boyer 95, (Stockhammer & Stehrer 11 )	Naastepad & Storm 07	Onaran & Galanis 11	Bowles & Boyer 95, NS07
Australia	Onaran & Galanis 11 (Stockhammer & Stehrer 11 )			Onaran & Galanis 11
Canada	Onaran & Galanis 11 (Stockhammer & Stehrer 11)			Onaran & Galanis 11

	<b>Domestic D</b>		<b>Total D</b>	
	<b>wage-led</b>	<b>Profit-led</b>	<b>wage-led</b>	<b>Profit-led</b>
Turkey	Onaran and Galanis 11		Onaran and Galanis 11 Onaran, Stockhammer 05	
Korea	Onaran and Galanis 11		Onaran and Galanis 11 Onaran, Stockhammer 05	
Mexico	Onaran and Galanis 11			Onaran and Galanis 11
Argentina	Onaran and Galanis 11			Onaran and Galanis 11
India	Onaran and Galanis 11			Onaran and Galanis 11
China	Onaran and Galanis 11	Molero Simarro 11 Wang 11		Onaran and Galanis 11 Molero Simarro 11
South Africa		Onaran and Galanis 11		Onaran and Galanis 11
Thailand		Jetin and Kurt 11		Jetin and Kurt 11

## The effect of a change in the profit share on total private demand

$$\frac{\partial Y}{\partial \pi} = (c_{\pi} - c_w) \frac{C/Y}{\pi} + i_{\pi} \frac{I/Y}{\pi} + \frac{\partial NX}{\partial \pi}$$

- Depends on the effect of distribution ( $\pi$ ) on
  - consumption (-),
  - investment (+),
  - net exports(+)
- Negative: wage led
  - high consumption differentials (strong reaction of C to  $\pi$ ),
  - low positive effect of an increase in  $\pi$  on I
  - Low positive effects on net exports
- Positive: profit led

# Empirical Literature

- Systems approach (VAR): Deals with simultaneity, weak in identifying effects on C and I (few if any control variables)
  - small effects (Onaran & Stockhammer 05, Korea, Turkey; Stockhammer & Onaran 04, US, UK, F;) or profit-led demand (Barbosa-Filho & Taylor 06, US; Flaschel & Proano 07)
- Single equation approach: Good in identifying effects, bad in dealing with endogeneity
  - estimate separate C, I, NX functions (!)
    - Bowles & Boyer 95; Naastepad & Storm 07; Hein and Vogel 08: OECD6/8
  - estimate separate C, I, X, M, P functions
    - Onaran et al 11, Stockhammer et al 09; Ederer & Sto. 07, Sto. & Ederer 08, Stockhammer et al 11: US, Eurozone, France, Austria, Germany respectively
    - US: +effects of financialization
- Most find wage-led private domestic demand regimes
  - Onaran and Galanis 11, Stockhammer et al 09, Storm&Naastepad07, Hein&Vogel08, Stockhammer&Stehrer09

# Notes

- Investment
  - Igovernment effect (1<sup>st</sup> lag)
    - Kor: + sign, but rs – significant or + insign
    - China: - sign w ya (insign)/insign, but rs insign
    - Tur: insign
    - Arg: insign
    - India, SA, Mex insign
  - Total I: all but Tr & K profit led
  - Interest rate insign
- Unadjusted: too high X, M effects due to low rulc values in marginals calculations, all but Indo profit led
- 2007 values: much higher X, M, also higher C effects

## Consumption

	<i>c</i>	<i>t-value</i>	<i>dlog(Rt)</i>	<i>t-value</i>	<i>dlog(Wt)</i>	<i>t-value</i>	DW	R2	Sample						
Euro area-12	0.006	3.110	0.127	3.716	0.739	15.406	1.871	0.873	1961 2007						
Germany	0.007	2.439	0.091	1.576	0.714	10.162	1.954	0.713	1961 2007						
France	0.007	3.153	0.137	4.717	0.640	10.770	2.120	0.771	1961 2007						
Italy	0.008	2.474	0.167	4.101	0.711	8.621	1.515	0.705	1961 2007						
Australia	0.017	4.394	0.098	3.295	0.440	5.463	1.831	0.411	1961 2007						
	<i>c</i>	<i>t-value</i>	<i>dlog(Rt)</i>	<i>t-value</i>	<i>dlog(Wt)</i>	<i>t-value</i>	<i>ar(1)</i>	<i>t-value</i>	DW	R2	Sample				
UK	0.006	1.501	0.162	5.200	0.735	6.852	0.331	2.173	1.838	0.683	1962 2007				
Canada	0.007	1.911	0.160	6.268	0.659	6.852	0.411	2.904	1.935	0.725	1962 2007				
	<i>c</i>	<i>t-value</i>	<i>dlog(Rt)</i>	<i>t-value</i>	<i>dlog(Wt)</i>	<i>t-value</i>	<i>dlog(Rt-1)</i>	<i>t-value</i>	<i>dlog(Wt-1)</i>	<i>t-value</i>	<i>dlog(Ct-1)</i>	<i>t-value</i>	DW	R2	Sample
US	0.012	4.048	0.181	4.968	0.536	6.509	-0.114	-2.523	-0.140	-1.389	0.247	1.517	2.017	0.822	1962 2007
	<i>c</i>	<i>t-value</i>	<i>dlog(Rt-1)</i>	<i>t-value</i>	<i>dlog(Wt-1)</i>	<i>t-value</i>	DW	R2	Sample						
Japan	0.011	2.256	0.083	2.103	0.611	6.747	2.300	0.599	1962 2007						



	c	t-value	dlog(Rt)	t-value	dlog(Wt)	t-value	dlog(Rt-1)	t-value	dlog(Wt-1)	t-value	dlog(Ct-1)	t-value	DW	R2	Sample		
Turkey	0.008	0.506	0.328	2.840	0.316	2.432	0.088	0.688	0.275	1.824	-0.151	-0.873	1.803	0.320	1972 2006		
	c	t-value	dlog(Rt)	t-value	dlog(Wt)	t-value	DW	R2	Sample								
Korea	-0.004	-0.411	0.072	3.820	0.845	7.603	2.073	0.641	1971 2007								
Argentina	0.003	0.575	0.430	7.927	0.579	13.903	1.944	0.855	1971 2007								
	c	t-value	dlog(Rt)	t-value	dlog(Wt)	t-value	AR(1)	t-value	DW	R2	Sample						
Mexico	0.006	1.263	0.376	7.625	0.566	17.015	0.477	3.021	1.878	0.905	1972 2007						
	c	t-value	dlog(Rt)	t-value	dlog(Wt)	t-value	dlog(Rt-1)	t-value	dlog(Wt-1)	t-value	DW	R2	Sample				
China	-0.014	-0.690	0.443	3.730	0.400	1.629	-0.198	-1.604	0.375	1.702	2.020	0.593	1980 2007				
	c	t-value	dlog(Rt)	t-value	dlog(Wt)	t-value	dlog(Rt-1)	t-value	dlog(Wt-1)	t-value	dlog(Yat)	t-value	dlog(Yat-1)	t-value	DW	R2	Sample
India	0.003	0.530	0.123	3.270	0.586	4.317	0.028	0.903	0.158	1.319	-0.009	-0.100	-0.168	-2.324	1.894	0.809	1972 2007
	c	t-value	dlog(Rt)	t-value	dlog(Wt)	t-value	dlog(Yat)	t-value	DW	R2	Sample						
South Africa	0.009	2.939	0.312	9.030	0.785	10.101	-0.061	-3.400	1.926	0.781	1971 2007						



	c	t-value	log( $\pi$ t)	t-value	dlog(Yt)	t-value	DW	R2	Sample										
Turkey	-0.056	-0.547	0.041	0.294	3.343	6.456	1.743	0.567	1971 2006										
	c	t-value	log( $\pi$ t)	t-value	log( $\pi$ t-1)	t-value	dlog(Yt)	t-value	dlog(Yt-1)	t-value	log(lt-1)	t-value	log(Yt-1)	t-value	DW	R2	Sample		
Argentina	0.135	0.111	0.190	2.596	-0.147	-2.165	2.808	19.169	0.325	2.001	-0.164	-3.138	0.147	1.895	1.982	0.943	1972 2007		
	c	t-value	dlog(Yt)	t-value	dlog( $\pi$ t)	t-value	dlog( $\pi$ t-1)	t-value	dlog(lt-1)	t-value	log(lt-1)	t-value	log(Yt-1)	t-value	log( $\pi$ t-1)	t-value	DW	R2	Sample
Mexico	-1.778	-2.722	3.336	13.407	-0.349	-2.044	-0.259	-1.511	-0.040	-0.616	-0.343	-4.383	0.482	3.765	0.170	1.973	2.506	0.923	1972 2007
	c	t-value	dlog( $\pi$ t-1)	t-value	dlog(Yt)	t-value	dlog(lgt)	t-value	DW	R2	Sample								
Korea	-0.110	-5.834	-0.011	-0.311	2.509	10.320	0.186	1.960	1.589	0.816	1972 2007								
	c	t-value	dlog( $\pi$ t)	t-value	dlog(Yt)	t-value	DW	R2	Sample										
China	-0.006	-0.064	0.030	0.027	1.664	1.703	1.823	0.126	1982 2007										
	c	t-value	dlog( $\pi$ t)	t-value	dlog(Yt)	t-value	dlog(lgt-1)	t-value	DW	R2	Sample								
India	-0.018	-0.682	-0.164	-1.190	1.561	3.856	0.402	2.868	2.369	0.421	1972 2007								
	c	t-value	dlog( $\pi$ t-1)	t-value	dlog(Yt)	t-value	dlog(lt-1)	t-value	log(lt-1)	t-value	log(Yt-1)	t-value	log( $\pi$ t-1)	t-value	DW	R2	Sample		
South Africa	-2.249	-1.290	-0.283	-1.917	2.512	6.178	0.317	2.795	-0.343	-4.659	0.403	3.796	0.238	1.709	2.243	0.798	1972 2007		

## Domestic Prices

	c	<i>t-value</i>	dlog(ULCt-1)	<i>t-value</i>	dlog(Pmt)	<i>t-value</i>	DW	R2	Sample				
Euro area-12	0.014	3.518	0.624	7.846	0.123	2.915	1.515	0.747	1962 2007				
Italy	0.018	3.525	0.604	9.320	0.202	4.988	1.731	0.827	1962 2007				
UK	0.018	3.018	0.568	6.713	0.190	2.993	2.039	0.691	1962 2007				
Japan	0.013	3.227	0.516	6.833	0.095	3.100	1.666	0.630	1962 2007				
Canada	0.016	3.983	0.459	5.335	0.257	4.481	1.447	0.678	1962 2007				
	c	<i>t-value</i>	dlog(ULCt)	<i>t-value</i>	dlog(Pmt)	<i>t-value</i>	DW	R2	Sample				
Germany	0.012	8.103	0.618	16.023	0.031	1.428	1.491	0.864	1961 2007				
	c	<i>t-value</i>	dlog(ULCt-1)	<i>t-value</i>	dlog(Pt-1)	<i>t-value</i>	dlog(Pmt)	<i>t-value</i>	DW	R2	Sample		
France	0.007	2.360	0.275	2.141	0.522	3.394	0.086	3.281	1.809	0.907	1962 2007		
	c	<i>t-value</i>	dlog(ULCt-1)	<i>t-value</i>	dlog(Pt-1)	<i>t-value</i>	dlog(Pmt)	<i>t-value</i>	dlog(Pmt-1)	<i>t-value</i>	DW	R2	Sample
US	0.009	5.219	0.211	2.710	0.429	4.836	0.109	8.403	0.044	2.590	1.745	0.951	1962 2007
	c	<i>t-value</i>	dlog(ULCt)	<i>t-value</i>	dlog(Pmt)	<i>t-value</i>	dlog(Pmt-1)	<i>t-value</i>	DW	R2	Sample		
Australia	0.016	4.324	0.624	8.856	-0.031	-0.579	0.150	3.429	1.976	0.814	1962 2007		

	<i>c</i>	<i>t-value</i>	dlog(ULCt)	<i>t-value</i>	dlog(Pt-1)	<i>t-value</i>	dlog(Pmt)	<i>t-value</i>	DW	R2	Sample		
Turkey	0.011	0.643	0.354	5.402	0.263	4.280	0.364	7.124	2.196	0.949	1972 2006		
	<i>c</i>	<i>t-value</i>	dlog(ULCt)	<i>t-value</i>	dlog(ULCt-1)	<i>t-value</i>	dlog(Pt-1)	<i>t-value</i>	dlog(Pmt)	<i>t-value</i>	DW	R2	Sample
Mexico	0.008	0.884	0.700	8.642	-0.265	-2.136	0.309	2.875	0.261	7.178	2.387	0.979	1972 2007
	<i>c</i>	<i>t-value</i>	dlog(ULCt)		dlog(Pmt)	<i>t-value</i>	dlog(Pmt-1)	<i>t-value</i>	DW	R2	Sample		
Korea	0.016	3.026	0.735	10.508	0.073	1.709	0.095	2.685	1.887	0.912	1972 2007		
	<i>c</i>	<i>t-value</i>	dlog(ULCt)	<i>t-value</i>	dlog(Pmt)	<i>t-value</i>	DW	R2	Sample				
Argentina	0.002	0.162	0.640	17.025	0.359	9.597	1.828	0.994	1971 2007				
China	0.010	2.126	0.832	12.990	0.022	0.660	1.289	0.883	1979 2007				
India	0.023	5.114	0.756	12.205	0.009	0.401	2.020	0.854	1971 2007				
South Africa	0.033	2.611	0.618	5.634	0.124	1.946	1.897	0.567	1971 2007				

## Export Prices

	c	t-value	dlog(ULCt-1)	t-value	dlog(Pxt-1)	t-value	dlog(Pmt)	t-value	DW	R2	Sample						
Euro area-12	0.003	1.670	0.165	3.141	0.102	2.504	0.566	27.168	1.586	0.970	1962 2007						
Germany	0.004	1.557	0.216	2.845	0.214	2.631	0.355	9.780	1.719	0.813	1962 2007						
Italy	0.004	0.960	0.178	2.616	0.156	2.695	0.569	19.040	2.495	0.946	1962 2007						
	c	t-value	log(Pxt-1)	t-value	log(ULCt-1)	t-value	log(Pmt-1)	t-value	dlog(ULCt)	t-value	dlog(Pmt)	t-value	ar(1)	t-value	dw	r2	Sample
France	0.429	3.756	-0.663	-4.558	0.098	1.710	0.475	5.253	-0.117	-1.131	0.545	17.814	0.722	4.160	1.760	0.962	1962 2007
	c	t-value	log(Pxt-1)	t-value	log(ULCt-1)	t-value	log(Pmt-1)	t-value	dlog(ULCt)	t-value	dlog(Pmt)	t-value	dw	r2	Sample		
United Kingdom	0.043	1.592	-0.412	-3.895	0.061	2.120	0.342	4.132	0.179	2.378	0.575	12.748	1.600	0.924	1961 2007		
United States	0.374	3.479	-0.352	-3.238	0.049	1.973	0.223	3.214	0.397	2.765	0.489	11.547	1.929	0.913	1961 2007		
	c	t-value	dlog(ULCt)	t-value	dlog(Pmt)	t-value	DW	R2	Sample								
Japan	-0.012	-4.226	0.313	5.610	0.389	16.889	2.023	0.921	1961 2007								
Australia	0.014	1.263	0.374	1.798	0.316	2.121	1.625	0.352	1961 2007								
	c	t-value	dlog(ULCt)	t-value	dlog(ULCt-1)	t-value	dlog(Pmt)	t-value	DW	R2	Sample						
Canada	0.004	0.632	0.620	3.209	-0.472	-2.712	0.820	8.822	1.932	0.795	1962 2007						

	c	<i>t-value</i>	dlog(ULCt-1)	<i>t-value</i>	dlog(Pmt)	<i>t-value</i>	DW	R2	Sample		
Turkey	-0.013	-0.395	0.179	1.827	0.868	9.972	2.277	0.851	1972 2007		
	c	<i>t-value</i>	dlog(ULCt)	<i>t-value</i>	dlog(Pmt)	<i>t-value</i>	DW	R2	Sample		
Mexico	0.014	0.830	0.260	2.514	0.675	9.619	2.112	0.925	1971 2007		
Argentina	0.014	0.913	0.107	2.858	0.878	23.456	2.014	0.994	1971 2007		
China	-0.008	-0.745	0.315	2.166	1.035	13.921	1.771	0.904	1979 2007		
India	0.022	1.259	0.693	2.879	0.109	1.322	1.711	0.342	1971 2007		
	c	<i>t-value</i>	dlog(ULCt)	<i>t-value</i>	dlog(Pxt-1)	<i>t-value</i>	dlog(Pmt)	<i>t-value</i>	DW	R2	Sample
Korea	-0.013	-1.578	0.336	2.911	0.009	0.127	0.614	9.198	1.703	0.886	1972 2007
	c	<i>t-value</i>	dlog(ULCt)	<i>t-value</i>	dlog(Pmt)	<i>t-value</i>	ar(1)	<i>t-value</i>	DW	R2	Sample
South Africa	0.068	1.660	-0.529	-1.516	0.957	6.374	0.357	1.995	1.699	0.616	1972 2007

## Exports

	c	t-value	dlog(Px/Pmt)	t-value	dlog(Xt-1)	t-value	dlog(Yrwt)	t-value	dlog(Et)	t-value	DW	R2	Sample
Euro area-12	-0.021	-1.042	-1.304	-4.813	0.161	1.460	1.884	3.821	0.141	1.916	1.683	0.643	1971 2007
France	-0.030	-2.151	-0.314	-2.204	0.265	2.466	2.065	5.952	0.172	2.016	1.765	0.601	1971 2007
	c	t-value	dlog((Px/Pm)t-1)	t-value	dlog(Yrwt)	t-value	DW	R2	Sample				
Germany	0.000	0.002	-0.428	-1.967	1.779	2.911	2.121	0.207	1971 2007				
	c	t-value	dlog(Px/Pmt)	t-value	dlog(Yrwt)	t-value	DW	R2	Sample				
Italy	-0.005	-0.266	-0.273	-1.760	1.554	3.028	1.863	0.308	1971 2007				
UK	0.011	0.821	-0.519	-3.771	1.057	2.885	1.636	0.443	1971 2007				
Japan	0.014	0.617	-0.428	-4.039	1.293	1.984	2.169	0.355	1971 2007				
Australia	0.036	1.782	-0.235	-1.891	0.472	0.779	1.944	0.095	1971 2007				
	c	t-value	dlog(Px/Pmt)	t-value	dlog(Yrwt)	t-value	dlog(Et-1)	t-value	ar(1)	t-value	DW	R2	Sample
US	-0.037	-1.990	-0.286	-2.182	2.935	6.099	0.113	2.051	0.517	3.427	2.315	0.727	1972 2007
	c	t-value	dlog((Px/Pm)t-1)	t-value	dlog(Xt-1)	t-value	dlog(Yrwt)	t-value	DW	R2	Sample		
Canada	-0.026	-1.498	-0.558	-2.774	0.172	1.371	2.056	4.163	1.648	0.495	1971 2007		





## Imports

	c	t-value	dlog((P/Pm)t-1)	t-value	dlog(Yt)	t-value	DW	R2	Sample						
Euro area-12	-0.008	-0.433	0.236	1.182	2.035	3.450	1.537	0.329	1962 2007						
Italy	-0.008	-0.759	0.233	2.390	2.136	6.818	2.219	0.607	1962 2007						
Japan	0.010	0.740	0.255	3.299	1.136	4.576	1.835	0.499	1962 2007						
	c	t-value	dlog((P/Pm)t-1)	t-value	dlog(Yt)	t-value	ar(1)	t-value	DW	R2	Sample				
Germany	0.009	0.990	0.005	0.046	1.911	7.083	0.283	1.848	1.903	0.618	1963 2007				
	c	t-value	log(Mt-1)	t-value	log((P/Pm)t-1)	t-value	log(Yt-1)	t-value	dlog((P/Pm)t)	t-value	dlog(Yt)	t-value	DW	R2	Sample
France	-2.452	-4.565	-0.292	-3.932	0.140	2.796	0.573	4.330	0.069	0.989	2.923	8.361	2.166	0.782	1961 2007
United Kingdom	-2.954	-4.748	-0.414	-4.773	0.130	3.178	0.769	4.814	-0.024	-0.388	1.698	8.584	2.142	0.739	1961 2007
United States	-4.610	-4.639	-0.414	-4.422	0.177	3.755	0.826	4.554	0.132	1.651	2.341	9.783	1.905	0.787	1961 2007
	c	t-value	dlog(P/Pmt)	t-value	dlog(Yt)	t-value	DW	R2	Sample						
Australia	-0.017	-0.823	0.558	2.964	1.886	3.576	2.081	0.374	1961 2007						
	c	t-value	dlog(P/Pmt)	t-value	dlog(Yt)	t-value	dlog(Yt-1)	t-value	dlog(Mt-1)	t-value	DW	R2	Sample		
Canada	0.000	-0.008	0.356	2.570	2.503	8.780	-1.636	-4.164	0.424	3.369	2.218	0.675	1962 2007		



	Exports								Imports				Sum	
								$\frac{\partial X}{\partial Y}$				$\frac{\partial M}{\partial Y}$	$\frac{\partial NX}{\partial Y}$	
	eP.ULC	eULC.RULC	ePx.ULC	eX.Px	eX.RULC	RULC	Yf/Y	X/Y	$\frac{\partial \pi}{\partial Y}$	eM.P	eM.RULC	M/Y	$\frac{\partial \pi}{\partial Y}$	$\frac{\partial \pi}{\partial Y}$
	A	B	C	D	E (B*C*D)	F	G	H	I (-E*G*H/F)	J	K (A*B*J)	L	M (K*G*L/F)	I-M
Euro area	0.624	2.660	0.184	-1.304	-0.637	0.619	0.893	0.062	0.057	0.000	0.000	0.068	0.000	0.057
Germany	0.618	2.617	0.274	-0.428	-0.307	0.615	0.900	0.214	0.096	0.000	0.000	0.209	0.000	0.096
France	0.577	2.363	0.148	-0.428	-0.150	0.615	0.867	0.171	0.036	0.481	0.656	0.175	-0.162	0.198
Italy	0.604	2.527	0.211	-0.273	-0.146	0.623	0.909	0.174	0.037	0.233	0.356	0.172	-0.089	0.126
UK	0.568	2.316	0.148	-0.519	-0.178	0.643	0.885	0.195	0.048	0.313	0.412	0.195	-0.110	0.158
US	0.369	1.585	0.138	-0.286	-0.063	0.634	0.926	0.068	0.006	0.428	0.250	0.085	-0.031	0.037
Japan	0.516	2.066	0.313	-0.428	-0.276	0.673	0.933	0.074	0.028	0.255	0.271	0.070	-0.026	0.055
Canada	0.459	1.849	0.148	-0.558	-0.153	0.601	0.884	0.278	0.063	0.617	0.524	0.264	-0.203	0.266
Australia	0.624	2.661	0.374	-0.235	-0.234	0.597	0.904	0.140	0.049	0.558	0.926	0.159	-0.223	0.272

	Exports								Imports				Sum	
								$\frac{\partial X}{Y}$				$\frac{\partial M}{Y}$	$\frac{\partial NX}{Y}$	
	eP.ULC	eULC.RULC	ePx.ULC	eX.Px	eX.RULC	RULC	Yf/Y	XY	$\frac{\partial \pi}{\partial \pi}$	eM.P	eM.RULC	M/Y	$\frac{\partial \pi}{\partial \pi}$	$\frac{\partial \pi}{\partial \pi}$
	A	B	C	D	E (B*C*D)	F	G	H	I (-E*G*H/F)	J	K (A*B*J)	L	M (K*G*L/F)	I-M
Turkey	0.481	1.927	0.179	-1.613	-0.557	0.459	0.937	0.123	0.140	0.546	0.506	0.139	-0.144	0.283
Mexico	0.629	2.695	0.260	-0.621	-0.436	0.466	0.928	0.148	0.128	0.472	0.800	0.159	-0.253	0.381
Korea	0.735	3.779	0.336	-0.500	-0.636	0.753	0.891	0.237	0.178	0.216	0.600	0.255	-0.181	0.359
Argentina	0.640	2.780	0.107	-0.318	-0.095	0.507	0.975	0.079	0.014	0.745	1.327	0.070	-0.178	0.192
China	0.832	5.966	0.315	-1.945	-3.658	0.503	0.867	0.232	1.463	0.795	3.946	0.193	-1.311	2.774
India	0.756	4.106	0.693	-0.253	-0.718	0.753	0.914	0.091	0.080	0.546	1.695	0.112	-0.230	0.310
South Afri	0.618	2.620	0.000	0.000	0.000	0.624	0.921	0.237	0.000	1.002	1.624	0.211	-0.506	0.506

# Two wage-led recovery scenarios

	Scenario 1		Scenario 2	
	Change in profit share to preserve the peak wage share	The % change in aggregate demand (includes national and global multiplier effects, i.e. changes in Pm and Yrw)	Change in profit share	The % change in aggregate demand (includes national and global multiplier effects, i.e. changes in Pm and Yrw)
Euro area-12	-11.05	2.49	-11.05	2.36
United Kingdom	-7.83	2.01	-7.83	1.91
United States	-6.31	6.47	-6.31	6.15
Japan	-16.71	1.77	-16.71	1.49
Canada	-7.73	2.44	-3.00	2.84
Australia	-9.02	-1.35	-3.00	0.03
Turkey	-18.41	11.22	-18.41	10.81
Mexico	-22.03	-0.56	-3.00	1.45
Korea	-8.64	7.60	-8.64	7.46
Argentina	-9.12	0.86	-3.00	1.27
China	-8.00	-7.44	-1.00	5.56
India	-15.96	0.05	-3.00	0.43
South Africa	-13.07	-6.29	-1.00	1.93

1. global GDP↑ by 2.81%

2. global GDP↑ by 3.05%

# FT on ↓labour share: "threat to recovery"

"The decline in the labour share, along with a shift of labour income towards higher earners, may be an important part of why the US economic recovery is so sluggish. *Workers on lower wages consume much of their income, while higher wage earners and those with capital income are more likely to save.*"

Robin Harding, "Pay gap a \$740bn threat to US recovery",  
Financial Times, December 14,  
2011