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FESSUD

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Inequality, Debt and Demand Regimes

Daniel Detzer and Eckhard Hein
Berlin School of Economics and Law

Workshop „Mapping the Future of Finance“,
Bank of England and the FESSUD Project
London, 25 May 2016

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Outline

1. Theory of finance dominated capitalism
    1. Macroeconomics of finance-dominated capitalism
    2. Regimes under finance-dominated capitalism
2. Empirical developments before the crisis
3. Financialisation, inequality and the occurrence of the regimes in a stock flow consistent model
    1. Theoretical channels
    2. Core equations of the model
    3. Simulation strategy
    4. Simulation results
4. Foresights drawn from the model

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THEORY OF FINANCE DOMINATED CAPITALISM

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Macroeconomics of finance-dominated capitalism

1. Distribution of income between **shareholders (rentiers), firms, managers and workers** is affected (distribution channel).
2. Rising shareholder power, dividend payments and share buybacks affect **objectives and constraints of firms and hence investment** (preference channel and internal means of finance channel)
3. Financial asset price booms, house price booms, changes in financial and consumption norms, financial market liberalisation allow for **wealth-based and debt-financed consumption**
4. Liberalisation of international financial markets and capital accounts
   ➔ **debt-led private demand/consumption boom** vs. **export-led mercantilist** economies
   ➔ regional and global **current account imbalances**

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Regimes under finance-dominated capitalism

- **Debt-led private demand/consumption boom countries**

  (US, UK, Spain, Estonia, Greece, South Africa)

- **Export-led mercantilist countries**

  (Germany, Japan, Sweden)

- **Domestic demand-led countries**

  - mature (France, Italy, Portugal)

  - catching up (Hungary, Poland, Turkey)

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EMPIRICAL DEVELOPMENTS BEFORE THE CRISIS

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Current account balances before and after the crisis

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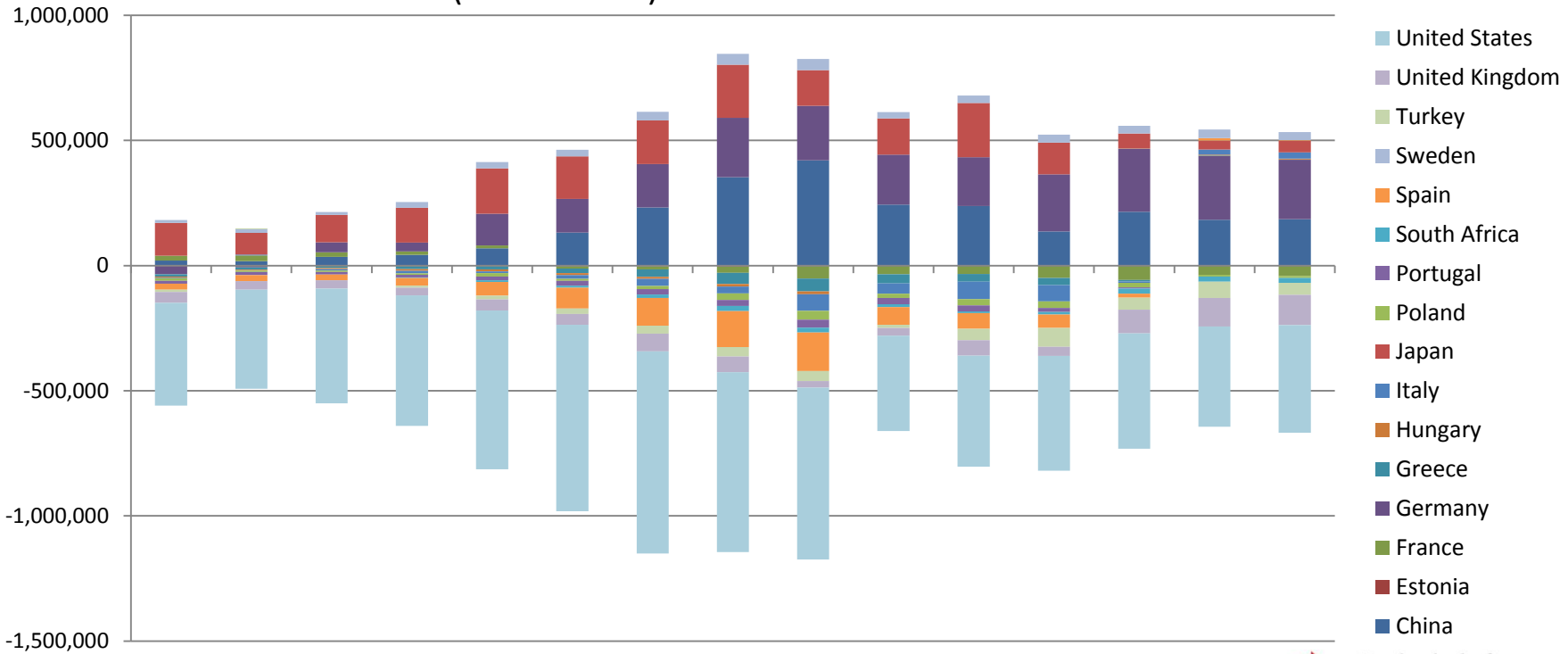
Current account balance, selected countries, 2000-2014, in billions of US dollars (Source: IMF)



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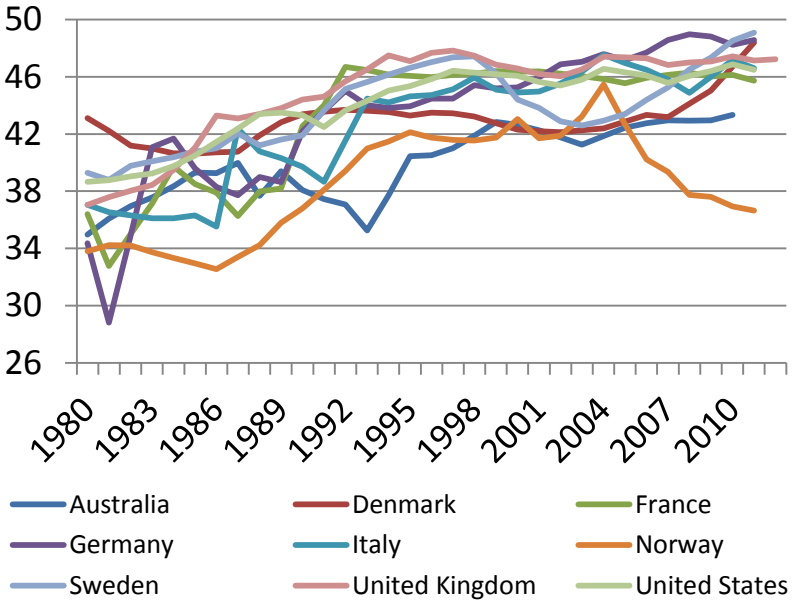
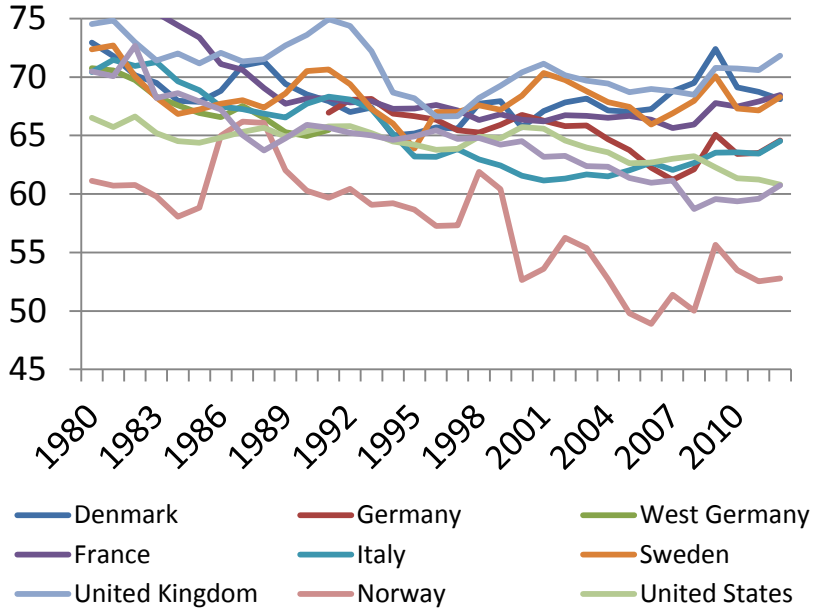
Inequality is increasing

Gini coefficient, market incomes, 1980 – 2012
(Source: SWIID 4.0)



Adjusted wage shares, 1980 – 2012
(Source: Ameco)



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Debt grew faster in the household sector

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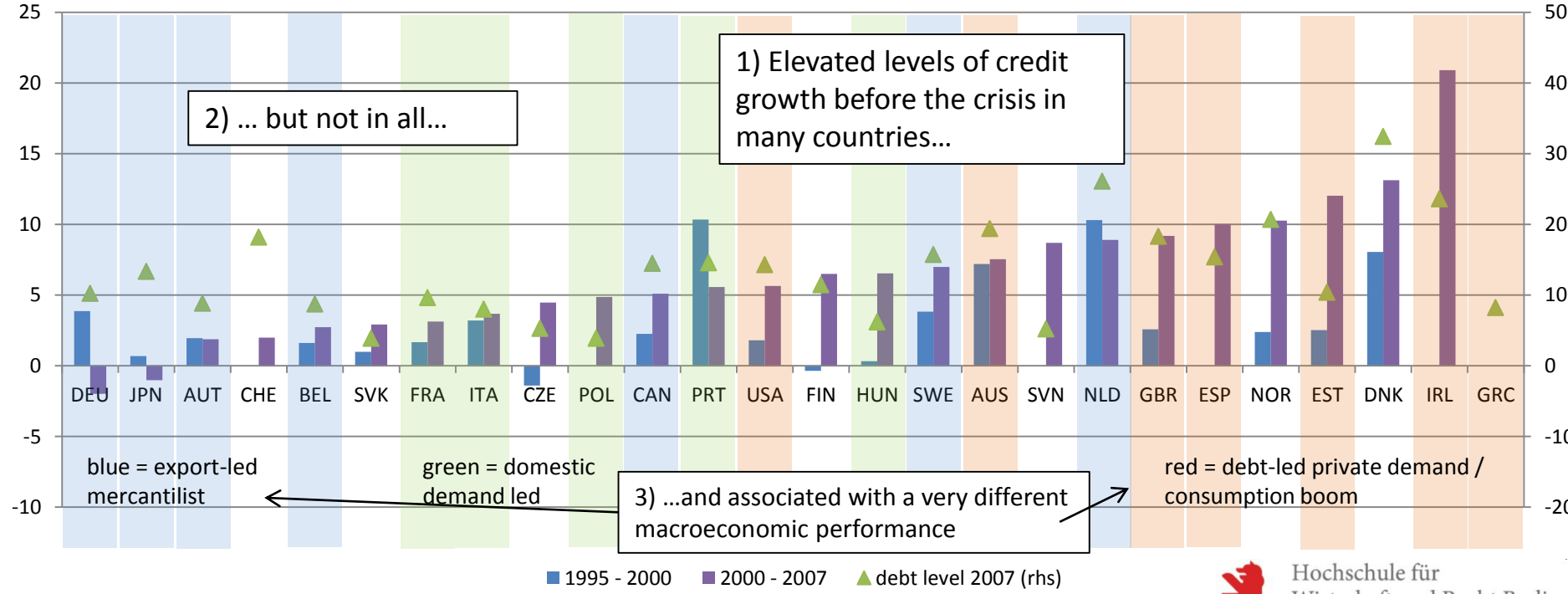
Household debt-to-income ratio, average change in percentage points p.a.



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FINANCIALISATION, INEQUALITY AND THE REGIMES IN A SFC MODEL

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THEORETICAL CHANNELS

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Revisiting the channels of financialisation

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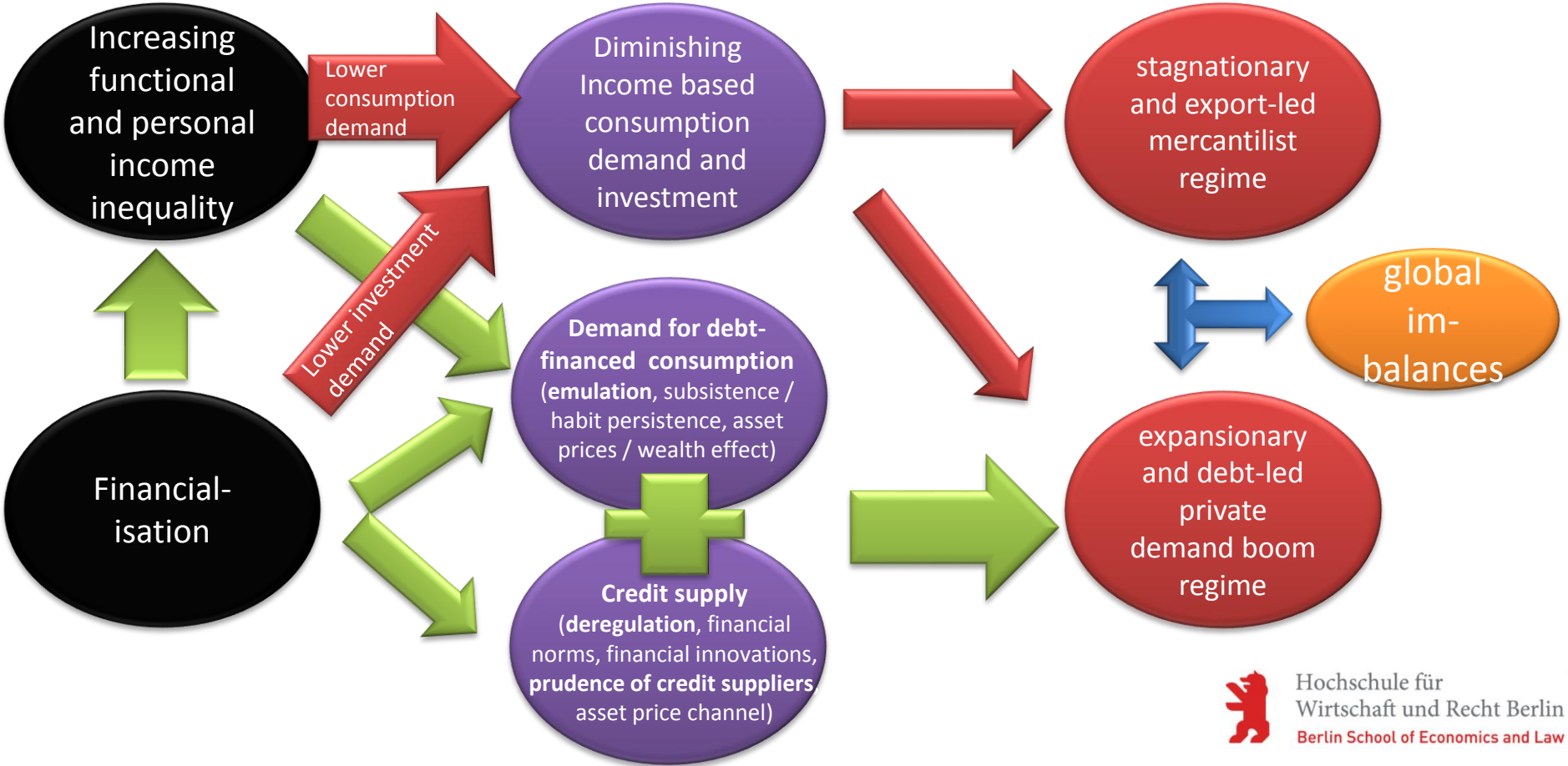

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THE MODEL STRUCTURE

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Features of the sfc model

- The model incorporates
  - personal and functional income distribution
  - credit supply channel (prudential regulation)
  - credit demand channel (emulation effects)
  - open economy features
- The model can be used to
  - show the differential impact of inequality and the occurrence of the two regimes
  - explore the dynamics and sustainability of the regimes
  - explore policy options (e.g. financial regulation, fiscal policy)

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Balance Sheet Matrix

		Sectors							
		Worker 1	Worker 2	Rentiers	Firms	Banks	Government	RoW	Sum
Assets	Deposits	$+D_{W1}$	$+D_{W2}$	$+D_R$	$+D_F$	$-D$	$+D_{Gov}$	$+D_{RoW}$	0
	Loans	$-L_{W1}$	$-L_{W2}$		$-L_F$	$+L$	$-L_{Gov}$	$-L_{RoW}$	0
	Equities			$+E_{h,R} * p_E$	$-E_{s,F} * p_E$				0
	Fixed Capital				$+K$				$+K$
	Net worth	$-V_{W1}$	$-V_{W2}$	$-V_R$	$-V_F$	0	$-V_{Gov}$	$-V_{RoW}$	$-K$
	Sum	0	0	0	0	0	0	0	0

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Transaction Flow Matrix

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	Worker 1	Worker 2	Rentiers	Firms		Banks	Gov.	RoW	Sum
				current	capital				
Consumption	$-C_{W1}$	$-C_{W2}$	$-C_R$	+C					0
Investment				+I	-I				0
Gov. cons.				+G			-G		0
Exports				+Ex				-Ex	0
Imports				-Im				+Im	0
WB	$+w_{W1} * N_{W1}$	$+w_{W2} * N_{W2}$		-WB					0
Depr. Allowance				-DA	+DA				0
Taxes	$-T_{W1}$	$-T_{W2}$	$-T_R$	$-T_F$			+T		0
Entrepr. Profits			$+ PD_F$	$- P_F$	$+ PU_F$				0
Interest loans	$-r*L_{W1}$	$-r*L_{W2}$		$-r*L_F$		+r*L	$-r*L_{gov}$	$-r*L_{RoW}$	0
Interest dep.	$+r*D_{W1}$	$+r_D*D_{W2}$	$+r_D*D_R$	$+r*D_F$		-r*D	$+r*D_{Gov}$	$+r*D_{RoW}$	0
*Sum	Sav_{W1}	Sav_{W2}	Sav_R	0	Sav_F	0	Sav_{Gov}	Sav_{RoW}	

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Model Structure – main equations

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functional income distribution

$WS = 1 - PS$

wage bill

$WB = WS * Y$

average wage

$w_a = WB / N$

wages of worker 2 (high wage workers)

$w_{W2} = w_a * wm_{W2}$

wages of worker 1 (low wage workers)

$w_{W1} = (WB - N_{W2} * w_{W2}) / N_{W1}$

WS = Wage Share
PS = Profit Share (ex)
WB = Wage Bill
w_a = average wage rate
wm_{w2} = wage multiple (ex)
w = wage rate
N = employment

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Model Structure – main equations

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Total production and demand

$Y = C + I + G + Ex - Im$

Imports

$Im = pIm * Y$

Exports

$Ex = Ex(-1) * (1 + g_{RoW})$

Government expenditure

$gr_G = gr_Y(-1) + (defT_{Gov} - (def_{Gov}(-1) / Y(-1)))$

Investment

$gr_K = \beta_1 + \beta_2 * u(-1) + \beta_3 * PS(-1) - \beta_4 * r_L(-1) + \beta_5 * ...(PU_F(-1) + DA(-1))/K(-1)$

gr = growth rate
pIm = propensity to import
def_{Gov} = guv. deficit
$defT_{Gov}$ = deficit target
u = utilization
PS = profit share
r_L = interest rate loans
PU_F = retained profits
DA = depreciation allowance
K = capital stock

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Model Structure – main equations

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Consumption

$C = C_R + C_{W1} + C_{W2}$

Rentier Consumption

$C_R = pc_{Yd,R} * Yd_R(-1) + pc_{V,R} * V_R(-1)$

Worker 2 Consumption

$C_{W2} = pc_{Yd,W2} * Yd_{W2}(-1) + pc_{V,W2} * V_{W2}(-1)$

Worker 1 Consumption

1) $C_{d,W1} = (1\text{-imit}) * pc_{Yd,W1} * Yd_{W1}(-1) + imit * C_{W2} + pc_{V,W1} * D_{W1}$
2) If $Yd_{W1} > C_{d,W1} \rightarrow C_{W1} = C_{d,W1}$
3) If $Yd_{W1} < C_{d,W1} \rightarrow$
   $C_{W1} = C_{d,W1} - (C_{d,W1} - Yd_{W1}(-1)) * L_{W1}(-1)/Yd_{W1}(-1)/PrudRat)$

gr = growth rate
pIm = propensity to import
def_{Gov} = guv. deficit
$defT_{Gov}$ = deficit target
u = utilization
PS = profit share
r_L = interest rate loans
PU_F = retained profits
DA = depreciation allowance
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Inequality, Debt and Demand Regimes

SIMULATION STRATEGY

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Baselines and experiments

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- Creation of two baselines cases with same parameters except emulation
  - LEC Low emulation country - without emulation effects (imit = 0)
    - Expected to tend to the export led mercantilist type of development
  - HEC High emulation country - with emulation (imit = 0.5)
    - Expected to tend to the debt led private demand type of development

- Expose both baselines to the same shocks
  - Increase in wage dispersion from worker 2 wage rate 122% of worker 1 wage rate to 185%
    - Compare results in LEC vs. HEC
  - Increase in wage dispersion from worker 2 wage rate 122% of worker 1 wage rate to 185% with financial constraint / regulation
    - Compare results in HEC vs. HEC with financial regulation

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Inequality, Debt and Demand Regimes

SIMULATION RESULTS – INCREASE IN WAGE DISPERSION

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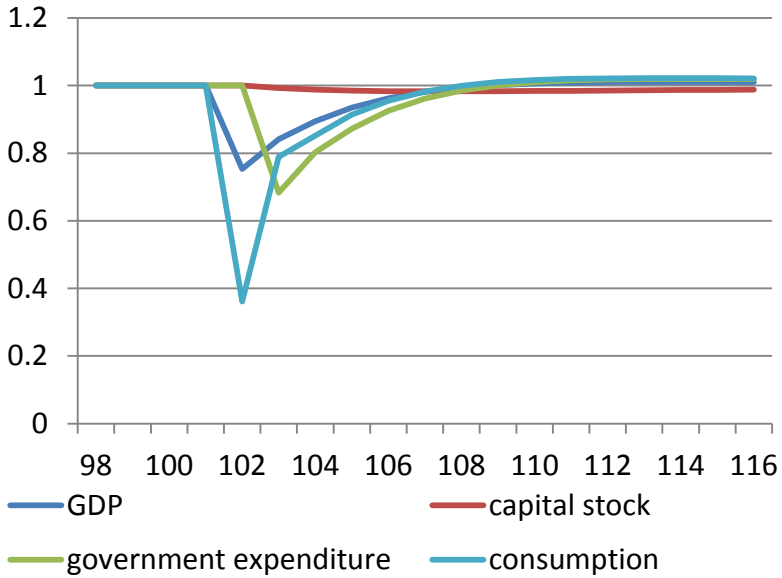
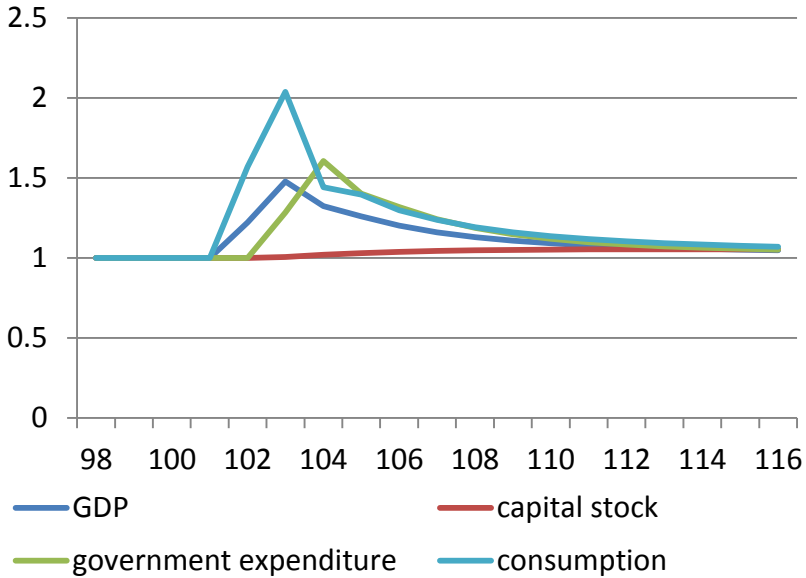
Growth rates – deviation from baseline after an increase in wage dispersion

Low Emulation Economy



High Emulation Economy



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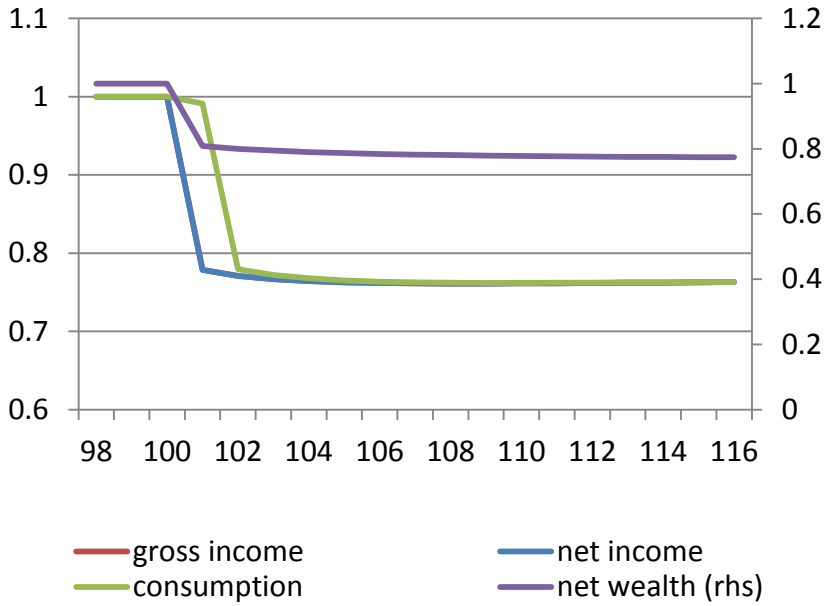
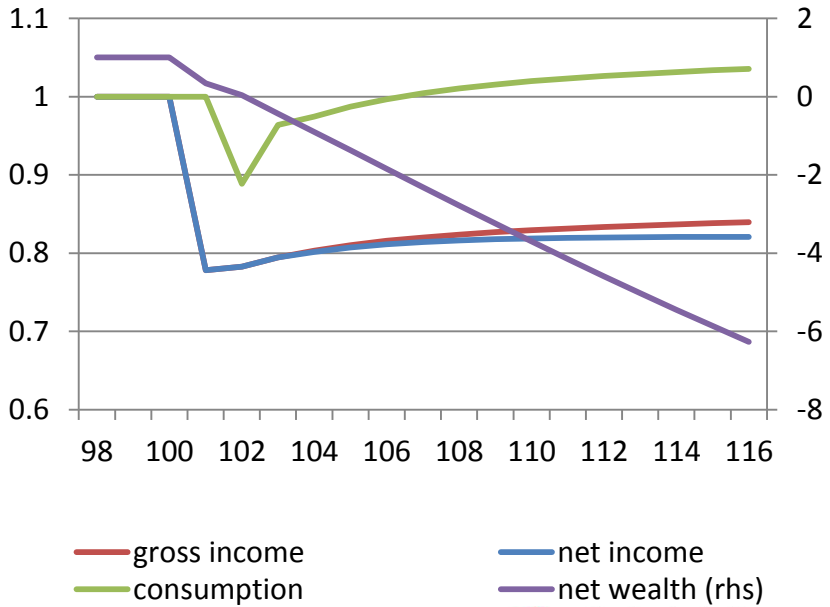
Worker 1 household variable – deviation from baseline after an increase in wage dispersion

Low Emulation Economy



High Emulation Economy



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Summary results for increased wage dispersion

Low Emulation Economy

- Contractive effect, lower GDP level
- Reduced share of consumption in GDP
- Improved trade balance
- Slight decrease in low wage workers net-wealth

→ Inequality supports occurence of export-led mercantilist characteristics

High Emulation Economy

- Expansionary effect, higher GDP level
- Increased share of consumption in GDP
- Deteriorating trade bal.
- Strong increase in low wage workers indebtedness

→ Inequality supports occurence of debt-led consumption boom characteristics

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Inequality, Debt and Demand Regimes

SIMULATION RESULTS – INCREASE IN WAGE DISPERSION WITH FINANCIAL REGULATION

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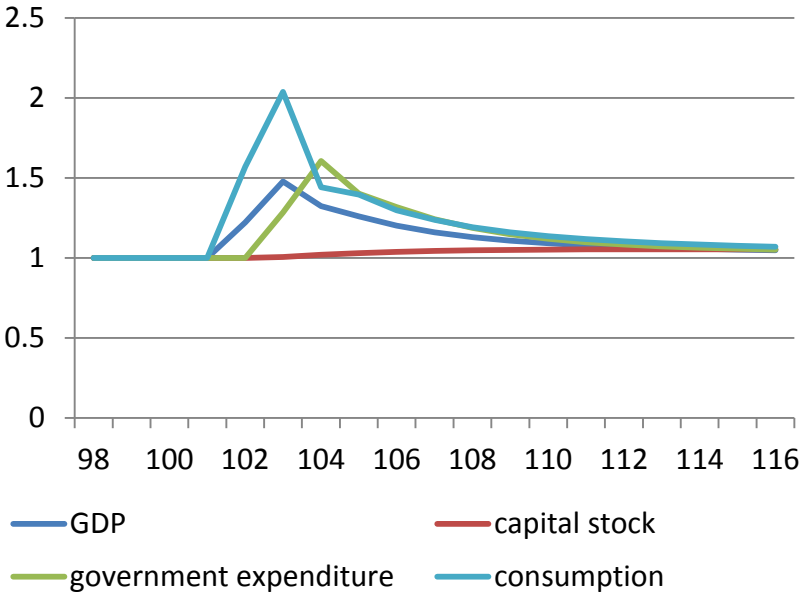
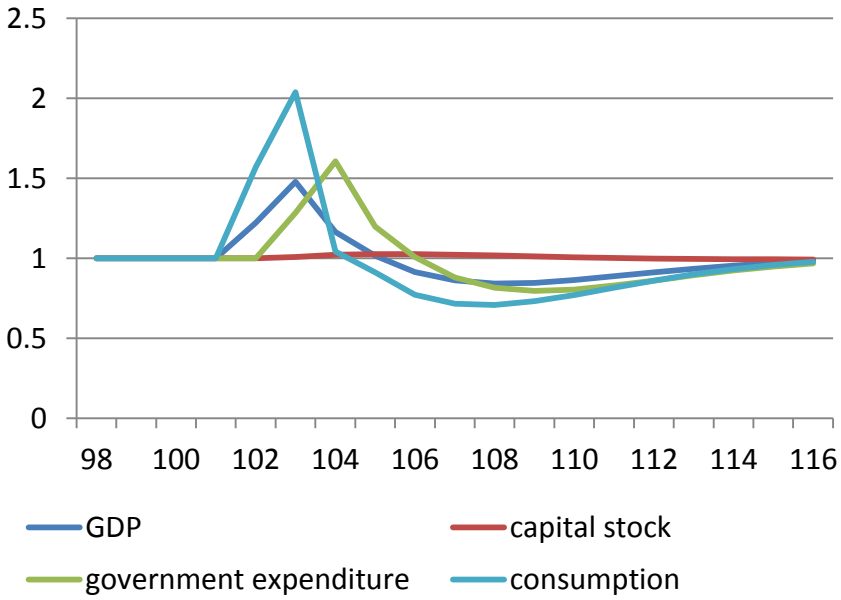
Growth rates – deviation from baseline after an increase in wage dispersion (HEC)

Baseline (you have seen that before)



with financial regulation



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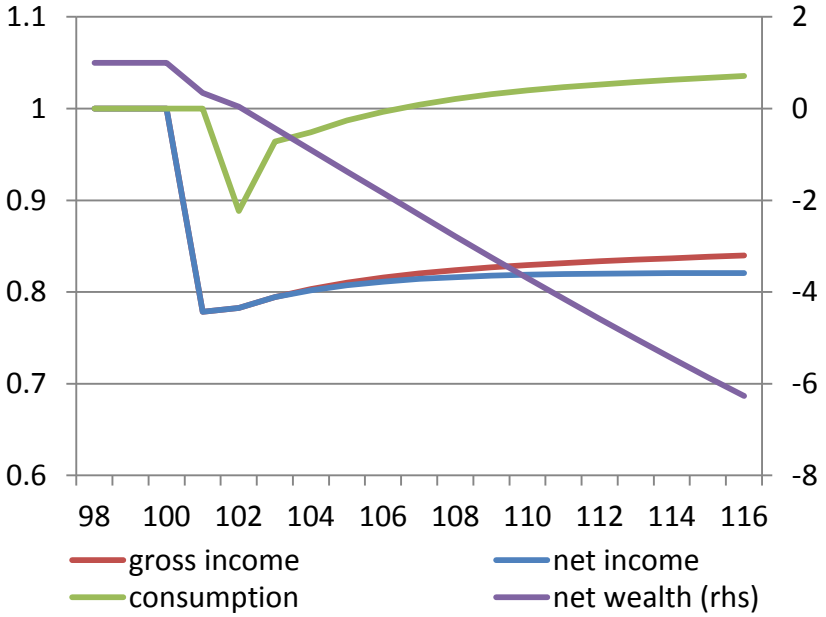
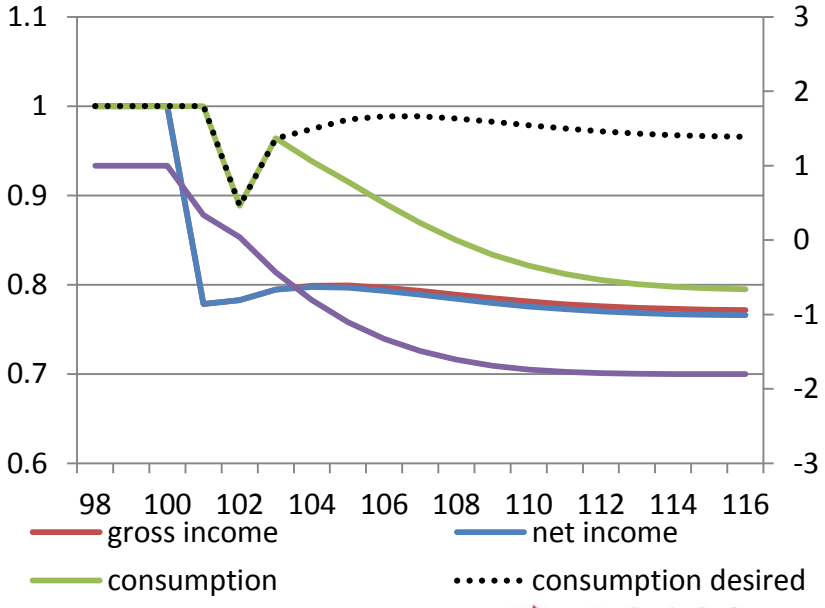
Worker 1 household variable – deviation from baseline after an increase in wage dispersion

Baseline (you have seen that before)



with financial regulation



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Summary results for increased wage dispersion with financial constraint

Baseline (you have seen that before)

- Expansionary effect, higher GDP level
- Increased share of consumption in GDP
- Deteriorating trade bal.
- Strong increase in low wage workers indebtedness
  - Economy become financially more fragile

with financial regulation

- Initial expansionary effect, then contractive effect, lower GDP level
- Reduced share of consumption in GDP
- Improved trade balance
- Less strong increase in indebtedness
  - less fragile structure

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Inequality, Debt and Demand Regimes

FORESIGHTS DRAWN FROM THE MODEL

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Foresights

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In the face of further increasing **personal and wage income inequality** :

- For individual countries where emulation effects play an important role a tendency towards the **debt led private demand type** of development
  - Expansive effects in the transitionary phase,
  - a higher long run GDP level,
  - Potentially unsustainable debt accumulation in lower income household sector and deteriorating international investment position.

- Each countries where emulation effects are only of minor importance or the access to debt for low income households is restricted (already high debt levels, prudential regulation, balance sheet recessions) a tendency towards the **export led type of development**
  - depressive effects in the transitionary phase,
  - a lower long run GDP level,
  - a relative shift of demand towards exports,
  - High export dependence and improving international investment position

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Foresights

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- Two potential scenarios for the Euro Area:
  - Scenario 1: More fragilities
    - Sufficiently high number of countries can follow the debt-led private consumption boom type of development
      - Growth for a sustained period, also for export led countries, and balanced EA external accounts, but …
        - » … increasing debt balances within countries may lead to financial instability
        - » …Imbalances within the Euro area will rise again
  - Scenario 2: Stagnation and a drag on the RoW
    - More EA countries follow or **have to** follow the export led type of development
      - Growth in the Euro Area will be weak, Euro area as a whole will turn export dependend and be a drag on world growth

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Thank you for your attention

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Debt-led private demand boom economies

Table 1: Sectoral financial balances as a share of nominal GDP, in per cent, average values for the trade cycle, for the USA, the UK, Spain, Estonia, Greece and South Africa

	USA *2001-2008*	UK *2002-2008*	Spain *2002-2008*	Estonia *1999-2008*	Greece *2002-2008*	South* Africa *2000-2008*
External sector	4.7	2.2	6.3	9.6	10.4	3.2
Public sector	-4.3	-3.4	0.0	-0.3	-5.3	-0.5
Corporate sector	0.4	1.5	-4.2	-4.4	3.9	-2.8*
Private household sector	-0.5	-0.3	-2.1	-4.9	-9.1	

**Financial balance of the private sector (corporate and private household sectors)*
Source: European Commission (2015), own calculations, Hein and Mundt (2012) for South Africa.

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Debt-led private demand boom economies

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Table 2: Real GDP growth, in per cent, and growth contributions, in percentage points, average values for the trade cycle, for the USA, the UK, Spain, Estonia, Greece and South Africa

	USA *2001-2008*	UK *2002-2008*	Spain *2002-2008*	Estonia *1999-2008*	Greece *2002-2008*	South Africa *2000-2008*
Real GDP growth	2.1	2.5	3.1	5.8	3.5	4.2
Contribution to the increase of GDP of:						
Private consumption	1.7	1.7	1.6	3.8	2.6	3.0
Public consumption	0.3	0.5	0.9	0.5	0.7	0.9
Investment	0.2	0.4	1.1	2.8	1.1	1.6
Balance of goods and services	-0.1	-0.1	-0.7	-1.5	-0.8	-1.2

Source: European Commission (2015), World Bank (2015) for South Africa, own calculations

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Export-led mercantilist economies

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Table 3: Sectoral financial balances as a share of nominal GDP, in per cent, average values for the trade cycle, for Germany, Japan and Sweden

	Germany *2003-2008*	Japan *1998-2008*	Sweden *2001-2008*
External sector	-4.9	-3.0	-6.9
Public sector	-2.0	-5.6	1.0
Corporate sector	1.2	5.5	3.2
Private household sector	5.7	2.8	2.4

Source: European Commission (2015), own calculations.

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Export-led mercantilist economies

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Table 4: Real GDP growth, in per cent, and growth contributions, in percentage points, average values for the trade cycle, for Germany, Japan and Sweden

	Germany *2003-2008*	Japan *1998-2008*	Sweden *2001-2008*
Real GDP growth	1.5	0.8	2.6
Contribution to the increase of GDP of:			
Private consumption	0.3	0.4	1.0
Public consumption	0.2	0.3	0.2
Investment	0.4	-0.3	0.9
Balance of goods and services	0.6	0.4	0.5

Source: European Commission (2015), own calculations.

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