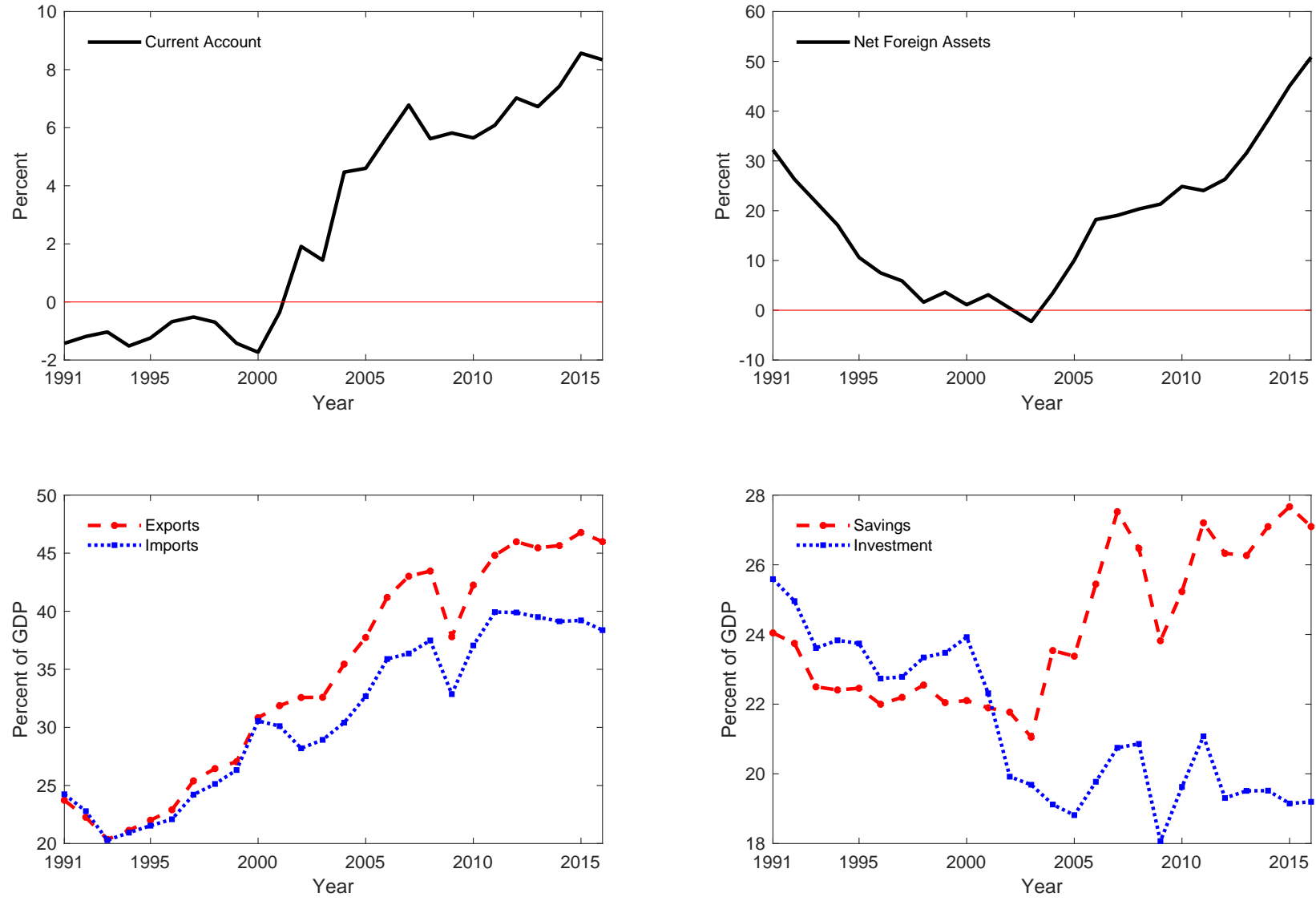


MOTIVATION

German Economic Indicators, 1991-2016



What caused these global imbalances?

- Financial integration, economic growth in emerging markets, population aging.
- **Our Focus: Labor Market Reforms.**

THE MODEL: OVERVIEW

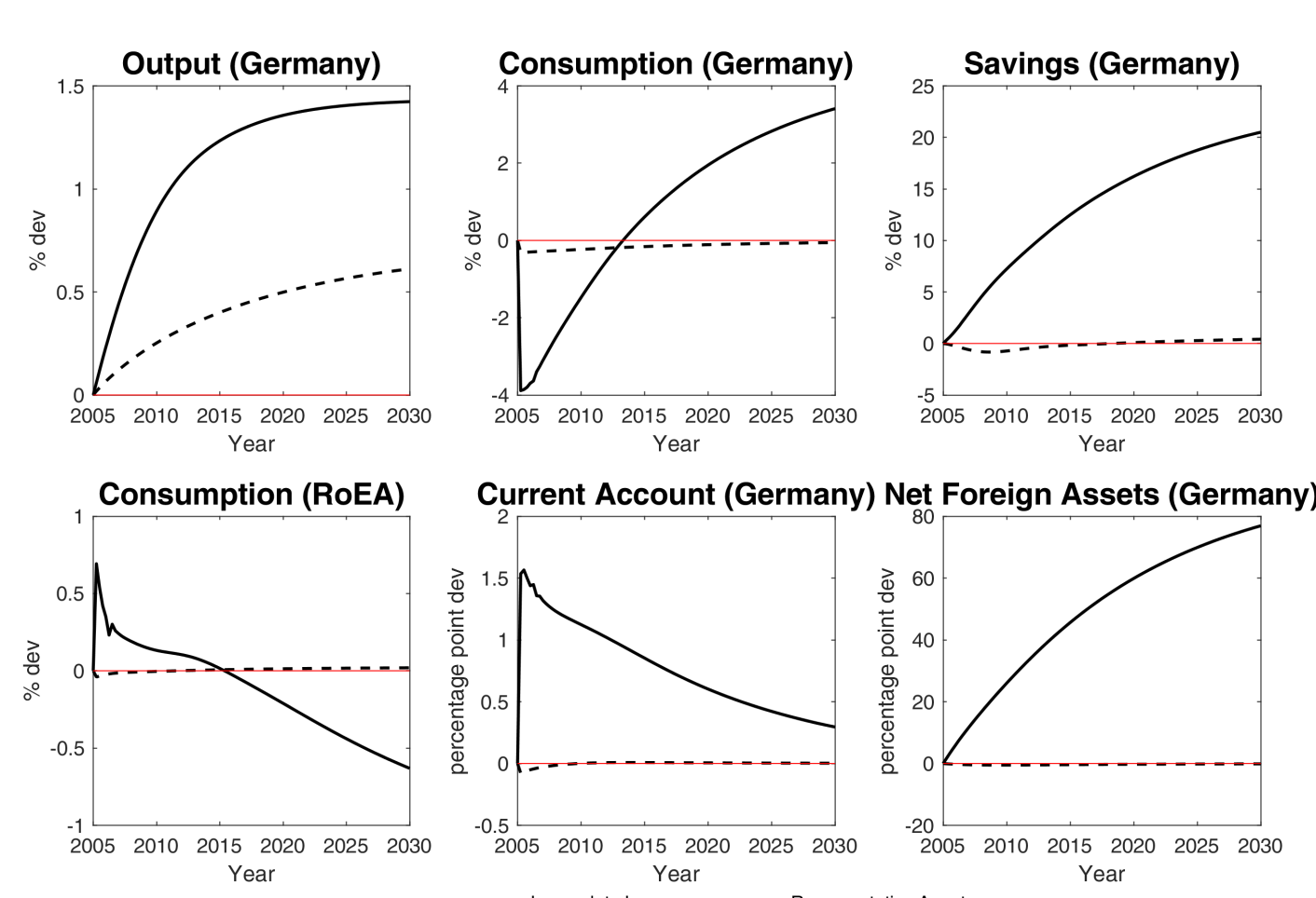
- Workers can be employed or unemployed.
- All employed workers live in one family.
- Every period, employed workers choose consumption and savings. They have access to international goods and asset markets.
- If a worker becomes unemployed, he has to leave the family (with a fraction of his savings).
- Once he finds a job again, he may re-enter the family and brings back his remaining savings.

THE OPTIMAL SAVINGS DECISION

$$\frac{1}{R_t^W} = \beta E_t \left[\underbrace{(1-s(1-\tau^F)(1-\rho_{t+1})) \frac{\lambda_{t+1}^e}{\lambda_t^e} \frac{1}{(1+\pi_t)}}_{U \text{ of employed worker}} + \underbrace{\sum_{k=1}^{S-1} \beta^{k-1} \frac{\lambda_{t+k}^e}{\lambda_t^e} \frac{\rho_{t+k}}{N_{t+k}} \frac{\mu_{t+k-1}^{eu_k} \cdot r_{t+k}^{eu_k} (1-\tau^F)}{1+\pi_{t+k}}}_{U \text{ of assets prev. unemp. bring back}} + \underbrace{s(1-\rho_{t+1}) \frac{\lambda_{t+1}^{eu_1}}{\lambda_t^e} \sum_{k=1}^S \tilde{r}_{t+k}^{eu_k} (1-\tau^F)}_{U \text{ of assets when unemployed}} \right]$$

where $\tilde{r}_{t+k}^{eu_k} = \theta_{t+k}^k (1-\tau^F)/(1+\pi_{t+k}) + \beta(1-\rho_{t+k}) \lambda_{t+k}^{eu_{k+1}} / \lambda_t^e \tilde{r}_{t+1}^{eu_{k+1}}$ as long as $k < S$ and $\tilde{r}_t^{eu_S} = \theta_{t+S}^S (1-\tau^F)/(1+\pi_{t+S})$.

COMPARISON: REAGENT



The solid line shows the baseline incomplete insurance model, the dashed line denotes the rep. agent version.

WHAT WE KNOW SO FAR

- Modern macroeconomic models can explain the following link: unemployment insurance $\downarrow \Rightarrow$ wages $\downarrow \Rightarrow$ int. competitiveness \uparrow .
- However, they do not find any notable effect on the current account. (see Dao 2013, Busl and Seymen 2013, Cacciatore et al. 2015 and Gadatsch et al. 2016).
- They all use the **representative agent framework**.
 - No direct incentive to save (internationally) in steady state.
 - Assumption to ensure steady state determinacy and stationarity of NFA.

MODEL: EMPLOYED WORKERS

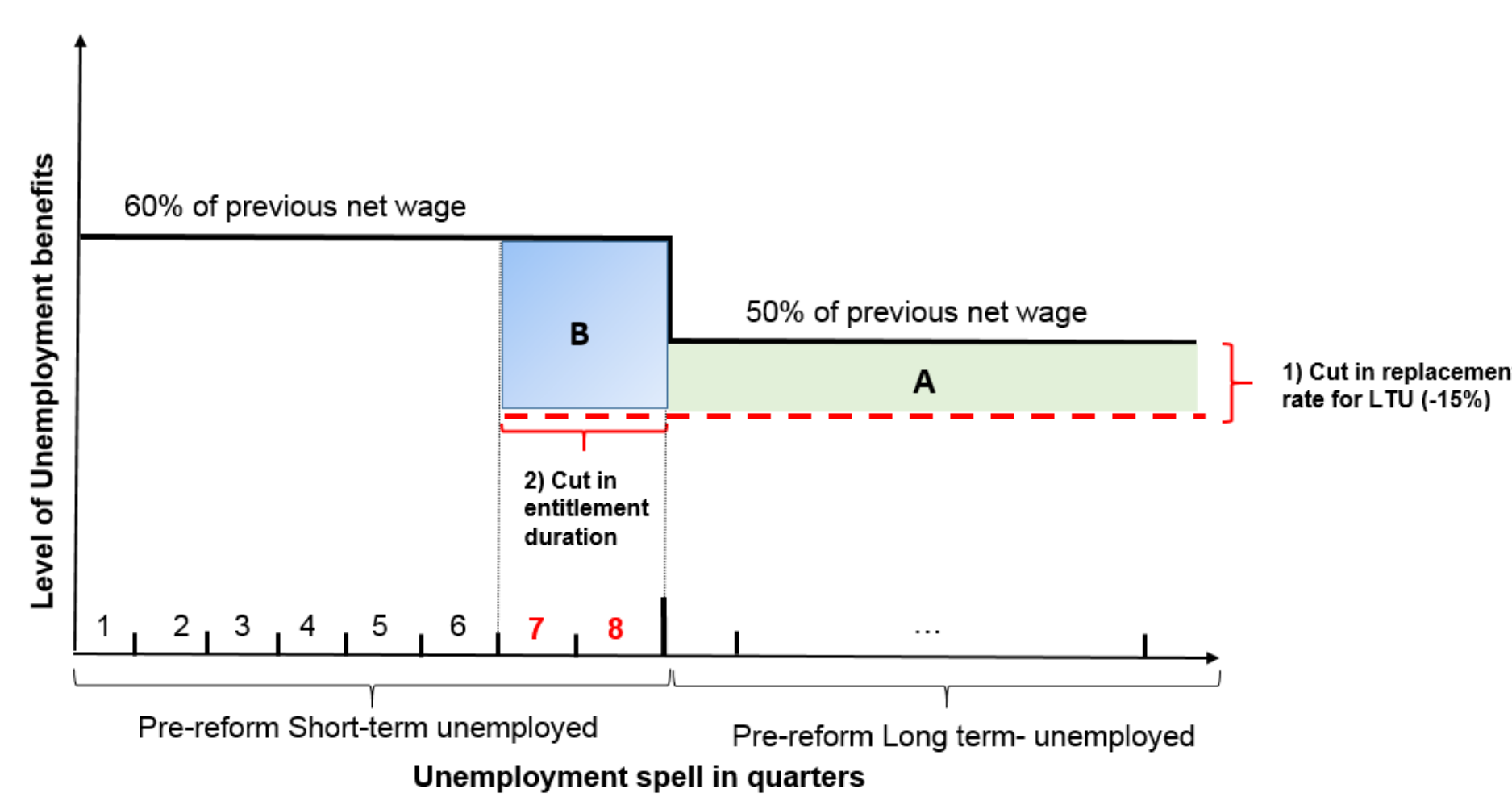
An employed worker maximizes

$$V_t^e = \max_{\{c_t^e, a_t\}} u(c_t^e) + \beta E_t [(1-s(1-\rho_{t+1})) V_{t+1}^e + s(1-\rho_{t+1}) V_{t+1}^{eu_1}]$$

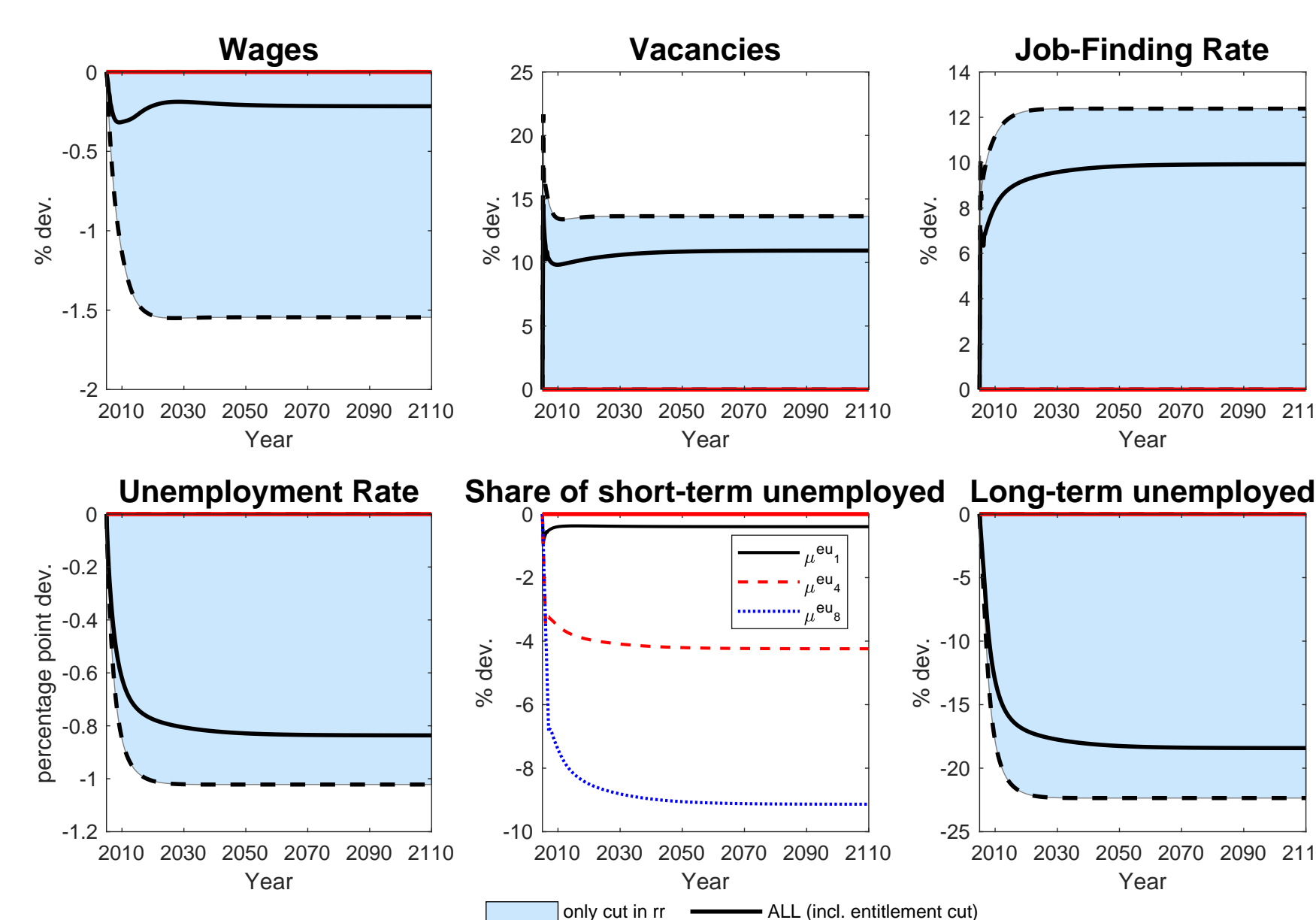
subject to

$$c_t^e + a_t + \bar{t} = (1-\tau_t^w) \omega_t + \frac{\Pi_t}{N_t} + (1-s(1-\tau^F)(1-\rho_t)) \frac{N_{t-1}}{N_t} \frac{R_{t-1}^W a_{t-1}}{1+\pi_t} + \frac{\rho_t}{N_t} \sum_{k=1}^{K-1} \left(\mu_{t-1}^{eu_k} r_t^{eu_k} \frac{R_{t-k}^W a_{t-k} (1-\tau^F)}{1+\pi_{t-k}} \right)$$

REFORM IMPLEMENTATION



RESULTS: THE LABOR MARKET



OUR CONTRIBUTION

What is the contribution of the German unemployment benefits reform to the increase of the the German CA?

1. We evaluate the reform effects in a two-country model with limited cross-sectional heterogeneity (Challe and Ragot 2016, EJ)
 - with incomplete insurance and
 - labor market frictions.
2. We show that the standard representative agent framework has significant limitations in this context.
3. Our paper contributes to the discussion on spillover effects of labor market policies.

MODEL: UNEMPLOYED

- They receive unemployment benefits dependent on their unemployment spell ($\kappa_t^{BSk} > \kappa_t^{BL}$).
- They consume their savings within K periods.

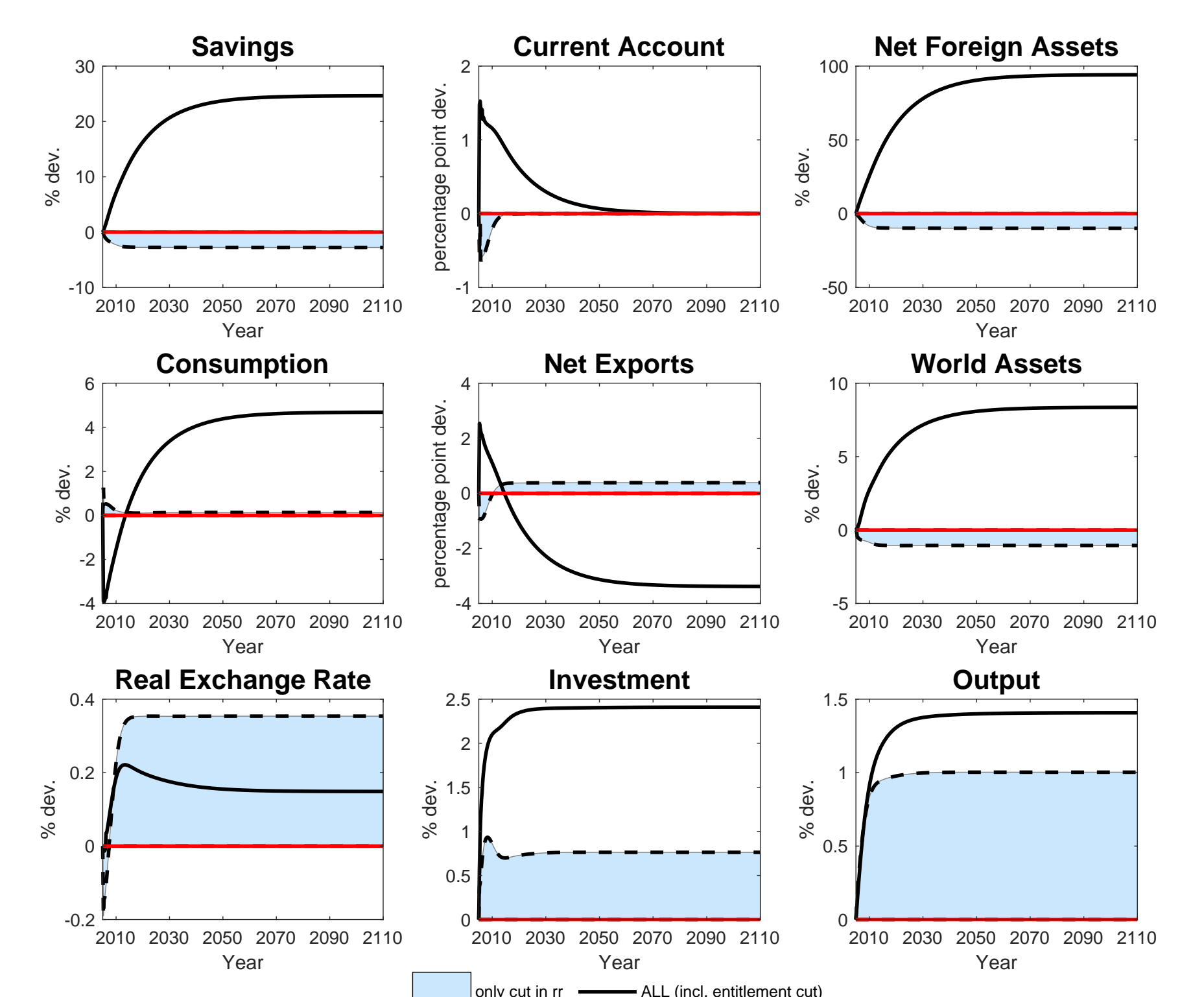
A **short-term unemployed worker** (in state $k < K$) faces the budget constraint

$$c_t^{eu,k} + \bar{t} = \kappa_t^{BSk} + \theta_t^k R_{t-1}^W \frac{a_{t-k} (1-\tau^F)}{1+\pi_t}$$

A **long-term unemployed worker** faces

$$c_t^{uu} + \bar{t} = \kappa_t^{BL}$$

RESULTS: AGGREGATES



MAIN FINDINGS

- Lower UB increase consumption risk \Rightarrow Germans increase savings and buy international bonds.
- Wages in GER $\downarrow \Rightarrow$ competitiveness $\uparrow \Rightarrow$ RER \uparrow .

CONCLUSIONS

- We present a two-region RBC model with labor market frictions and limited cross-sectional heterogeneity to derive an endogenous demand for assets.
- This allows for permanent effects on NFA position after policy changes.
- We show that the German UB reform (Hartz IV) contributed significantly (18%) to the increase in the current account position.