

A Keynesian dynamic stochastic labor market disequilibrium model for business cycle analysis.

Christian Schoder
Vienna University of Economics and Business

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Introduction: Motivation

Traditional Post-Keynesian (TPK) model

Dynamic Stochastic General Equilibrium (DSGE) model

Dynamic Stochastic Labor Market Disequilibrium (DSLMD) model

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Traditional Post-Keynesian (TPK) model

- + Demand-driven (in the short run/long run)
 - + Keynesian unemployment
 - + Wage bargaining and conflict inflation
- Schoder (2015, mimeo): methodological, ontological and internal inconsistencies of microfoundation
 - Strong assumption of parameter stability
 - Backward-looking, static expectations

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Traditional Post-Keynesian (TPK) model

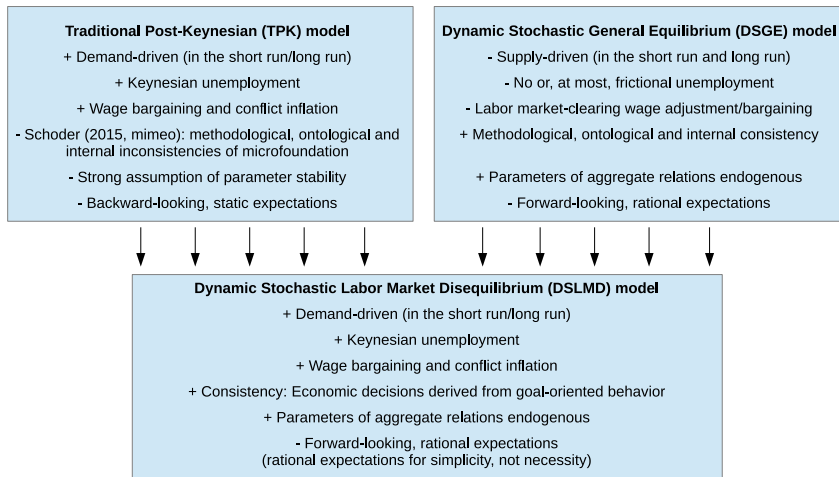
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Dynamic Stochastic General Equilibrium (DSGE) model

- Supply-driven (in the short run and long run)
 - No or, at most, frictional unemployment
 - Labor market-clearing wage adjustment/bargaining
- + Methodological, ontological and internal consistency
 - + Parameters of aggregate relations endogenous
 - Forward-looking, rational expectations

Dynamic Stochastic Labor Market Disequilibrium (DSLMD) model

Introduction: Motivation



Introduction: Main results of comparing DSLMD, TPK, DSGE, SNC

Post-Keynesian theory is consistent with mainstream micro-foundation.

- ▶ DSLMD and TPK basically tell the same story.
- ▶ DSLMD and TPK are demand, DSGE and SNC supply-driven.
- ▶ DSLMD and TPK allow for Goodwin type of cycles if wage formation responds sluggishly to changes in labor market conditions.
- ▶ → *Model closure* and not foundation renders a model Keynesian or neoclassical (cf. Tobin 1982 UCP, Marglin 1987 HUP, Palley 1993 JPKE).

DSLMD > TPK:

- ▶ Methodological, ontological and internal consistency in the micro-foundation
- ▶ Parameters of aggregated behavioral relations are endogenous
- ▶ Addresses the forward-looking nature of expectations as emphasized by Keynes.

TPK > DSLMD:

- ▶ Rational expectations may be considered more restrictive than static expectations.

Behavioral foundations of DSGE, DSLMD, TPK, SNC

	DSGE	DSLMD	TPK	SNC
C	Inter-temporal optimization with risk of permanent income loss yields consumption function in current income and wealth with endogenous parameters.		Consumption function in current income and wealth with exogenous parameters.	
I	Tobin's q theory.		Investment function in the gap between utilization and desired utilization which can be interpreted in terms of Tobin's q theory.	
P	Endogenous mark-up pricing on marginal costs given price adjustment costs. It is equal to Kaleckian mark-up pricing if a fixed-coefficient production function is assumed.			
W	Nominal wage adjustment to clear labor market.	Nominal wage is assumed to be constant or subject to collective bargaining.		Nominal wage adjustment to clear labor market.

How to solve the models?

Linearization

- ▶ The TPK and SNC models are a set of linear dynamic equations.
- ▶ The DSLMD and DSGE models are a set of non-linear dynamic equations which we linearize around the steady state.

Mathematically speaking, all four models are of the form

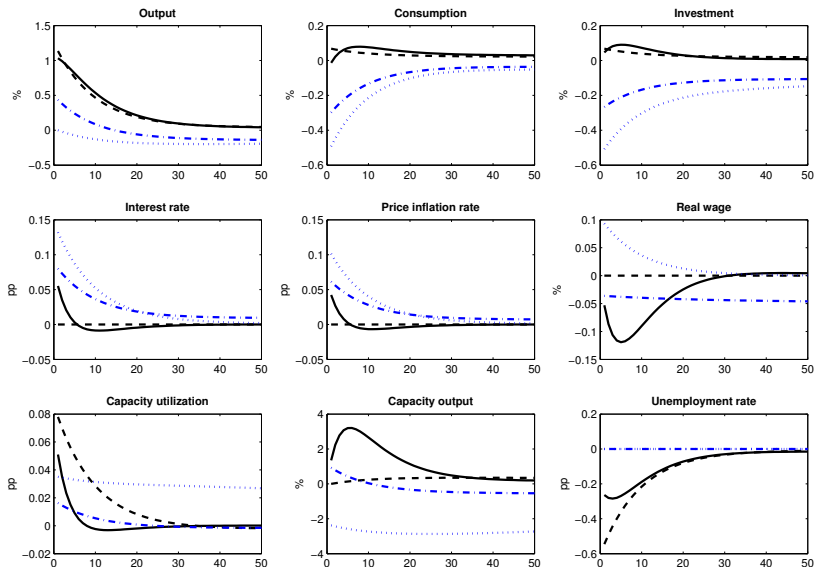
$$A \begin{bmatrix} X_{1,t+1} \\ E_t X_{2,t+1} \end{bmatrix} = B \begin{bmatrix} X_{1,t} \\ X_{2,t} \end{bmatrix} + CV_t$$

- ▶ Problem: The model equations include forward-looking variables (e.g. expected utilization gap) which are not known today.
- ▶ Note that so far E_t does not necessarily represent rational expectations.

How to deal with forward-looking variables?

- ▶ The simplistic TPK/SNC approach is to assume $E_t X_{2,t+1} = X_{2,t}$.
- ▶ The simplistic DLMD/DSGE approach is to assume that E_t represents rational expectations.

Persistent budget-neutral fiscal policy shock for DSLMD (black-solid) and TPK (black-dashed) with constant wage as well as DSGE (blue-dashed-dotted) and SNC (blue-dotted)



Concluding remarks and open questions

- ▶ The proposed DSLMD model is heterodox in theory but orthodox in methodology. The core of Keynesian theory, i.e. *the principle of effective demand*, is consistent with mainstream micro-foundation.
- ▶ Does PK theory need micro-foundations?
- ▶ It overcomes the danger of methodological, ontological and internal inconsistencies but comes at the cost of strong assumptions: inter-temporal optimization and rational expectations.
- ▶ Yet, isn't the assumption of purely backward-looking expectations strong, too? PKs should be open to different forms of consistent micro-foundations.
- ▶ Major fields of future research:
 - ▶ Instead of active choice (inter-temporal optimization) introduce passive choice (evolutionary optimization).
 - ▶ Instead of rational expectations introduce non-rational learning assuming agents have a very simple model in mind.
- ▶ Software packages exist which make modeling and estimation very convenient (Dynare).