

Does Anyone Pay the Corporate Income Tax?

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

not google

Does Anyone Pay the Corporate Income Tax?

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

not google

but the corporate income tax still does collect some money

Corporate Taxation and Firm Entry : Can I Adapt the Melitz Model?

Sam Bucovetsky

Preliminaries

A Tax on What?

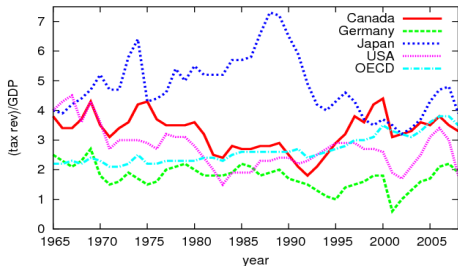
New Tricks for Old Dogs

A Beginning of a Start

Some Obvious Results

Noisy Signals

Corporate Tax revenue as a Share of GDP



old controversies

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

is the corporate income tax a tax on the return to capital?

old controversies

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

is the corporate income tax a tax on the return to capital?
or pure profits?

old controversies

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

is the corporate income tax a tax on the return to capital?
or pure profits?
or entrepreneurship?

the idea:

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

ability of a firm to avoid taxes is an exogenous characteristic

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

the idea:

ability of a firm to avoid taxes is an exogenous characteristic but not known (or not known perfectly) ex ante by prospective entrants

so tax breaks for one sector may generate entry in another sector [as in Cherkashin, Demadova, Kee and Krishna (2010)]

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

the Melitz model

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

Melitz-type model used by Davies and Eckel (2010) to
analyze corporate tax competition

their model : no entry costs ; firms footloose ; variable wage

the Melitz model

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

Melitz-type model used by Davies and Eckel (2010) to analyze corporate tax competition

their model : no entry costs ; firms footloose ; variable wage

specialization results : high-productivity firms move to low-tax, high-wage jurisdictions

a 2-sector Melitz model

- different effective tax rates in sectors A and B
- nested CES utility :

$$U = [A^{(\gamma-1)/\gamma} + B^{(\gamma-1)/\gamma}]^{\gamma/(\gamma-1)}$$

with

$$A = \left[\int q_A(\omega)^{(\sigma-1)/\sigma} d\omega \right]^{\sigma/(\sigma-1)}$$

$$B = \left[\int q_B(\omega)^{(\sigma-1)/\sigma} d\omega \right]^{\sigma/(\sigma-1)}$$

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

- firms differ in productivity ψ (output per worker) [with density function $g(\psi)$, distribution function $G(\psi)$], have identical fixed costs f
- profits in sector i ($i = A, B$) taxed at effective tax rate t_i
- variable costs (w/ψ per unit of output), fixed costs (wf) are tax deductible
- entry costs f_e are not tax deductible

Sectoral Equilibrium

if R_i is total expenditure by consumers on output of sector i , and P_i is price index for sector i , then define

$$Z_i \equiv R_i P_i^{\sigma-1} (\sigma - 1)^{\sigma-1} \sigma^\sigma$$

so that profit (before tax) of a type- ψ firm in sector i is $Z_i w^{-\sigma} \psi^{\sigma-1} - wf$, so that the cut-off productivity level ψ_i in sector i is defined by

$$Z_i w^{-\sigma} \psi_i^{\sigma-1} - wf = 0 \quad (1)$$

the tax rate does not enter here directly, since all profits are taxed here

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

Sectoral Equilibrium

if R_i is total expenditure by consumers on output of sector i , and P_i is price index for sector i , then define

$$Z_i \equiv R_i P_i^{\sigma-1} (\sigma - 1)^{\sigma-1} \sigma^\sigma$$

so that profit (before tax) of a type- ψ firm in sector i is $Z_i w^{-\sigma} \psi^{\sigma-1} - wf$, so that the cut-off productivity level ψ_i in sector i is defined by

$$Z_i w^{-\sigma} \psi_i^{\sigma-1} - wf = 0 \quad (1)$$

the tax rate does not enter here directly, since all profits are taxed here

the free entry condition is

$$w(1 - t_i) \int_{\psi_i}^{\infty} (Z_i w^{-\sigma} \psi^{\sigma-1} - f) g(\psi) d\psi - f_e = 0 \quad (2)$$

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

comparative statics

equations (1) and (2) define ψ_i and Z_i as functions of the sectoral tax rate t_i and the wage rate w

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

comparative statics

equations (1) and (2) define ψ_i and Z_i as functions of the sectoral tax rate t_i and the wage rate w

with Z_i an increasing function of t_i and ψ_i a decreasing function of t_i

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

comparative statics

equations (1) and (2) define ψ_i and Z_i as functions of the sectoral tax rate t_i and the wage rate w

with Z_i an increasing function of t_i and ψ_i a decreasing function of t_i

so (in this little model, at least), tax cuts in a sector do stimulate productivity (and have no productivity spillovers) since

$$Z_i = Y P_i^{\sigma - \gamma} P^{\gamma - 1} (\sigma - 1)^{\sigma - 1} \sigma^\sigma$$

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

comparative statics

equations (1) and (2) define ψ_i and Z_i as functions of the sectoral tax rate t_i and the wage rate w

with Z_i an increasing function of t_i and ψ_i a decreasing function of t_i

so (in this little model, at least), tax cuts in a sector do stimulate productivity (and have no productivity spillovers) since

$$Z_i = Y P_i^{\sigma-\gamma} P^{\gamma-1} (\sigma-1)^{\sigma-1} \sigma^\sigma$$

then tax cuts in sector A will lower the relative price of sector A output if and only if intra-sectoral substitution is easier than inter-sectoral substitution

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

sectoral uncertainty

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

what if entrepreneurs got noisy signals of the their firm would actually choose?

sectoral uncertainty

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

what if entrepreneurs got noisy signals of the their firm would actually choose?

would tax cuts in one sector have spillovers?

sectoral uncertainty

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

what if entrepreneurs got noisy signals of the their firm would actually choose?

would tax cuts in one sector have spillovers?

not here, I don't think

a noisier model

- a fraction μ of prospective entrants get a signal that they will wind up in sector A
- this signal is correct with probability $\eta > \mu$
- free entry condition for those with an “ A ” signal is

$$w\eta(1 - t_A) \int_{\psi_A}^{\infty} (Z_A w^{-\sigma} \psi^{\sigma-1} - f)g(\psi)d\psi + w(1 - \eta)(1 - t_B) \int_{\psi_B}^{\infty} (Z_B w^{-\sigma} \psi^{\sigma-1} - f)g(\psi)d\psi - f_e = 0 \quad (3)$$

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

noise doesn't matter

- with an analogous condition for those who get the opposite signal (that they're destined for sector B)
- the cut-off productivity levels ψ_A and ψ_B have no first-order effect on the left side of equation (3)
- so the system is still recursive : equation (3) determines the Z_i 's as functions of the sectoral tax rates (and of the wage rate), and then equation (1) determines ψ_i as a function of Z_i

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals

noise doesn't matter

- with an analogous condition for those who get the opposite signal (that they're destined for sector B)
- the cut-off productivity levels ψ_A and ψ_B have no first-order effect on the left side of equation (3)
- so the system is still recursive : equation (3) determines the Z_i 's as functions of the sectoral tax rates (and of the wage rate), and then equation (1) determines ψ_i as a function of Z_i
- however differentiation of (3) and its analogue show that t_A still has no effect on Z_B , and therefore no effect on ψ_B

Corporate
Taxation and
Firm Entry :
Can I Adapt
the Melitz
Model?

Sam
Bucovetsky

Preliminaries

A Tax on
What?

New Tricks for
Old Dogs

A Beginning
of a Start

Some
Obvious
Results

Noisy Signals