

Comment on “International Trade and Domestic Regulation under Asymmetric Information: A Simple General Equilibrium Approach” by D.Martimort and T.Verdier.

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1. The paper addresses a very interesting subject to me, which has not been discussed deeply enough and the presentation is attractive and gives a simple framework to go ahead and obtain many results.
2. My impression is that in this economy there is a main source of welfare losses. To see that, let us focus in a very simple economy: one agent, two final goods and two factors, and assume that the infrastructure suppliers charge a mark up on costs. This economy will be described by the following set of equations:

$$U_1 / U_2 = P_1/P_2$$

$$P_1 X_1 + P_2 X_2 = w L^0 + r K^0 + R$$

$$R = t_1 p_I I_1 + t_2 p_I I_2$$

$$X_1 + M_1 = F(L_1, K_1, I_1)$$

$$X_2 + M_2 = G(L_2, K_2, I_2)$$

$$I = K_I$$

$$P_I = r$$

$$P_1 F_L = w$$

$$P_1 F_K = r$$

$$P_1 F_I = P_I (1+t_1)$$

$$P_2 G_L = w$$

$$P_2 G_K = r$$

$$P_2 G_I = P_I (1+t_2)$$

$$I_1 + I_2 = I$$

$$L_1 + L_2 = L^0$$

$$K_1 + K_2 + K_I = K^0$$

$$P_1 = P_{1^*}$$

$$P_2 = P_{2^*}$$

So, we have eighteen equations, and the same number of unknowns: P_1 , P_2 , P_I , L_1 , L_2 , K_1 , K_2 , K_I , X_1 , X_2 , I , I_1 , I_2 , w , r , R , M_1 and M_2 . The trade balance condition can be obtained working with the budget constraint and the market equilibria.

It is always possible to find the equilibrium for this economy (see the classical proof by Shoven and Whalley, *The Review of Economic Studies* (1973)).

The social welfare cost is given by the distortion in the relative demand of capital and infrastructure.

A rise in the mark up t will increase the cost of allocation and it will be still higher if t_1 is different from t_2 .

Notice that monopolistic mark up would work as a tax of private collection. The value of this marginal cost of “private” funds, let us call it z , will depend on the elasticity of substitution between capital and infrastructure.

So, in principle there will be some coincidence between a regulator that tries to minimize rents and a social planner.

3. However, what should be the target of the regulator given the point of view of this social planner who maximizes social welfare?

The authors say, on page 8:

To model a meaningful trade-off between efficiency and rent extraction we follow the Incentive Regulation literature and assume that the regulatory agency in charge with curbing market power in intermediate sector j maximizes the profits of the final sectors which consume those intermediate goods for their own production process, namely: $W = \Pi_M + \Pi_A$

One observation to this is that profits of the firms in the industries of final goods are always zero, for there are constant returns to scale. So, given prices, mark ups, or taxes, the choice of inputs quantities by the firms will always lead to zero profits.

Also, the regulator is not adding the profits of the infrastructure industries to welfare, when those profits are paid to the only consumer of the economy.

And the regulator is not including in welfare the surplus of the consumer.

This regulator might not be paying attention to the point of view of the social planner.

The results of the paper are sensitive to the specification of the model. If both industries used only labor and infrastructure services, and not capital directly, then a uniform mark up would have no effect on welfare, for r would adjust to absorb the mark up. In that case the regulator could worsen things if the mark up became different for each industry.

The role of the regulator can be interpreted better from a positive rather than normative perspective. The assumption on the behavior of the regulator seems to be a case of passive regulation to demand by the firms (in the sense of Stigler, Peltzman, Posner or Becker).

The case of the paper seems also to be a special case in which the regulators put different weights on welfare of consumers and rents of the managers or shareholders of the industries that produce intermediate goods. This paper implicitly assumes that the weight put on agents that are not the shareholders of final goods are zero.

4. If a social planner were to design regulations he would take into account total net welfare

U (in money terms) - $R z$,

where z is the above mentioned marginal cost of private funds.

When would a regulator be concerned with the rents from asymmetric information and the social planner will not include those rents in social welfare?

A main case is when not all rents go to domestic agents.

Then, let us think in a case in which not all rents go to domestic agents. Then the economy must pay dividends abroad and the trade balance must be positive enough to compensate for capital movements. Under those circumstances, the choice of the “power of incentives” of the regulatory regime will be critical for the export effort of the economy.

5. Let me quote results from:

“Trade Performance and Regulatory Regimes”, O.O.Chisari, A. Estache. G .Lambardi and C. Romero, LACEA, Puebla (México), 2003 and Reunión Anual de la Asociación Argentina de Economía Política, Mendoza, november2003, available at www.aaep.org.ar

(See also:

Regulatory Economics and Quantitative Methods. Evidence from Latin America (O.O.Chisari, editor)E. Elgar, 2007).

There we compared the impacts of different regulatory regimes, with different power of incentives on trade performance of the economy of Argentina using a Computable General Equilibrium model calibrated for 2000. The model had 29 sectors of production, ten deciles of income, public sector and rest of the world. The share of agents of the rest of the world in property of infrastructure firms was approximately 50%. The assumption was that Argentina’s economy was small with respect to the rest of the world.

It is said there:

“Technological shocks are however not that common for regulated industries (except maybe for the telecoms sector). The main cost savings in these sectors

are through improvements in management and operational arrangements. The possibility of capturing and eventually sharing these gains is one of the main reasons why the price cap regimes have generally been initially very enthusiastically. Table 7.14 summarizes the results of the simulations of a 25% improvement in efficiency.

The efficiency gains in the regulated sector can be captured through reductions of $a_{I,R}$, the coefficient that represents inputs requirements from the rest of the economy, or by reductions in labor requirements per unit of output. Table 7.14 shows the results of assuming a 25% reduction of $a_{I,R}$. This is an internal gain of the regulated firmⁱ, normally expected as the result of a high-powered regulatory mechanism (price-cap).

A very interesting result is that domestic total welfare is not increased the most under PL, but under RR. The reason is that there is an efficiency gain obtained by the firm, but it is not allowed to keep it as part of its rate of return and it is fully transferred to domestic households and producers in the form of a price reduction. There is a pass-through from foreign agents to domestic agentsⁱⁱ.

Table 7.14 Efficiency gains (25%) within the regulated industry

	PL	PC	RR
Domestic Welfare	1.7	0.9	1.9
Mark-up Revenue /GDP	0.0	2.4	-0.4
Wage rate	1.6	-1.2	2.1
$r_R^{(3)}$	4.4	29.3	0.0
$P_R^{(2)}$	-9.4	0.0	-11.0
Exchange Rate ⁽¹⁾	-1.1	-0.7	-1.1
Exports	2.4	9.3	1.2
Imports	1.6	0.4	1.8
Trade Balance ⁽⁴⁾	4.4	29.3	0.1
X / GDP (10%)	10.1	10.7	10.0
GDP	1.8	1.8	1.7

Note: changes in percentage levels, except for X/GDP (benchmark in brackets) and Mark-up/ GDP. PL: Walrasian model, PC: model with price cap regulation, RR: model with Rate of Return regulation.(1) Exchange Rate: weighted average price ratio between non-

tradables and tradables (PN/PT); (2) PR: price of the regulated service; (3) rR: total rate of return of the regulated service (4) Trade Balance: measured in percentage change.

Source: own elaboration.

Table 7.14 shows that once more from the viewpoint households and workers, rate of return regulation is the preferred mode of regulation, and by a wide margin in this case. The same holds for the strong preference regulated operators and exporters for a price cap regime. Exports do not augment in the same proportion under RR than under PC because dividends are smaller and the domestic propensity to import is less than one. PC is more demanding of a domestic effort to repay the initial investment in the privatized sectors; in fact, the required increments under PC are very significant for this simplified model for Argentina: around 9%. This puts high pressure on the economy, not used to accessing easily international markets. The necessary increments under any of the rate-of-return adjustment mechanisms are much more modest, between 1 and 2%.

Long run incentives to exports seem to be stronger under RR, quite close to PL. PN/PT is lower under RR than under PC. The RR regime (rate of return fixed in foreign currency) increases welfare more than PL because the excessive profits are transferred to domestic customers via a reduction of priceⁱⁱⁱ.

Though it is true that PC incentives efficiency, from the point of view of welfare improvement and exports effort, the domestic society could have reasons to adopt a low-powered incentive scheme when the efficiency gains are expected within the privatized sector.”

The main conclusion is that with a regime of high power of incentives, it is necessary to compensate for the imbalance of the capital account, and the social planner might have that in mind when designing the regulatory regime. But that will imply the need to take into account the flow of dividends abroad and probably, mobility of resources with the rest of the world.

6. Martimort and Verdier need to include a special assumption to prove existence of equilibrium when the regulator tries to correct the rents of information using compatibility and participation constraints.

It can be conjectured that the introduction of a set of incentive compatibility constraints and of participation constraints could in fact imply non existence

of equilibrium. The incentive compatibility constraints, in a First Order Approach, could mimic the behavior of a monopsony (and it is known that market power is not easy to handle in general equilibrium) and the participation constraints could impose some fixed costs and create implicit increasing returns in this economy. A social planner might then take into account the costs of non equilibrium (probably rationing) even though the regulator of this paper Moreover, it can be conjectured that the introduction of a set of incentive compatibility constraints and of participation constraints could in fact imply non existence of equilibrium. The incentive compatibility constraints, in a First Order Approach, could mimic the behavior of a monopsony (and it is known that market power is not easy to handle in general equilibrium) and the participation constraints could impose some fixed costs and create implicit increasing returns in this economy of constant returns to scale; that could jeopardize the possibilities of financing of the producers of final goods.

7. Let us go back to the assumptions of the paper.

If there are rents in the intermediate sectors or regulated sectors, why is there not entry? The model implicitly assumes some barrier or hidden factor of production that prevent a competitive process. But then, is it not possible to trade also intermediate inputs as a regulatory mechanism? Why is it that intermediate or infrastructure sectors are not under the Heckscher- Ohlin assumption on the mobility of technological knowledge?

8. Again I think the authors have given a simple framework that is useful to discuss some matters that I think have not been studied. For example:
- Can the differences of regulatory regime between two economies –in other dimensions similar- create trade?
 - Is there a strategic choice of regulatory regime in a world of administered trade?

ⁱ Simulations considering efficiency loss of the same magnitude gave similar results but with the opposite sign.

ⁱⁱ Owners of the firm will not necessarily have incentives to introduce the efficiency gains, however.

ⁱⁱⁱ They become implicit shareholders who have to cover also the increase in wage rate.