



# CONSTRUCTAL LAW AND THE OGP OPTIMAL GLOBAL PRICING TECHNOLOGY

SERAFIM GREGORY SCURTU<sup>a</sup>, MIRCEA SCURTU<sup>b</sup>

<sup>a</sup>Johns Hopkins University, USA

<sup>b</sup>OGT – Optimal Global Technologies LLC, America

greg.scurtu@gmail.com, +1 919 323 5393, mitch.scurtu@optimalglobalpricing.com

The document discusses the integration of physics with economics through OGP technology and its application in resolving market arbitrage in various industries.

**Keywords:** Electrical circuits equilibrium; Economic systems equilibrium; Optimal solutions.

## 1. INTRODUCTION

The document discusses the integration of physics with economics through OGP (Optimal Globalization Pricing) technology, which aims to resolve market arbitrage and enhance economic equilibrium. Key points include: *OGP Technology*: A mathematical formulation for global economic transactions, incorporating transactional resistance to allow free evolution and increased access to transactions.

### *Components:*

Economic equilibrium problem

Computational engine from Stanford University

Finitely converging algorithm developed through research at NCSU

### *Applications:*

Resolving market arbitrage, particularly in the pharma industry, which faces \$100-\$200 billion in parallel trade annually. Addressing issues like optimal launch pricing, inter-regional and inter-temporal competition, trade and tariff arrangements, and market simulations.

*Results:* OGP technology can convert nonproductive capital from market arbitrage into productive capital for producers and consumers, addressing bottlenecks in global medicine launches and pricing.

*Conclusion:* OGP is a pioneering approach contributing to economic globalization by resolving market distortions and enhancing global trade efficiency.

The document also references various academic works that support the theoretical and empirical foundations of OGP technology.

## 2. MATERIALS AND METHODS

OGP (Optimal Globalization Pricing) technology integrates physics with economics by applying principles from physics, such as equilibrium and resistance, to economic systems. Specifically, it uses a

mathematical formulation to model global economic transactions, incorporating the concept of transactional resistance to allow for free evolution and increased access to what flows. This approach helps resolve market arbitrage and enhance economic equilibrium.

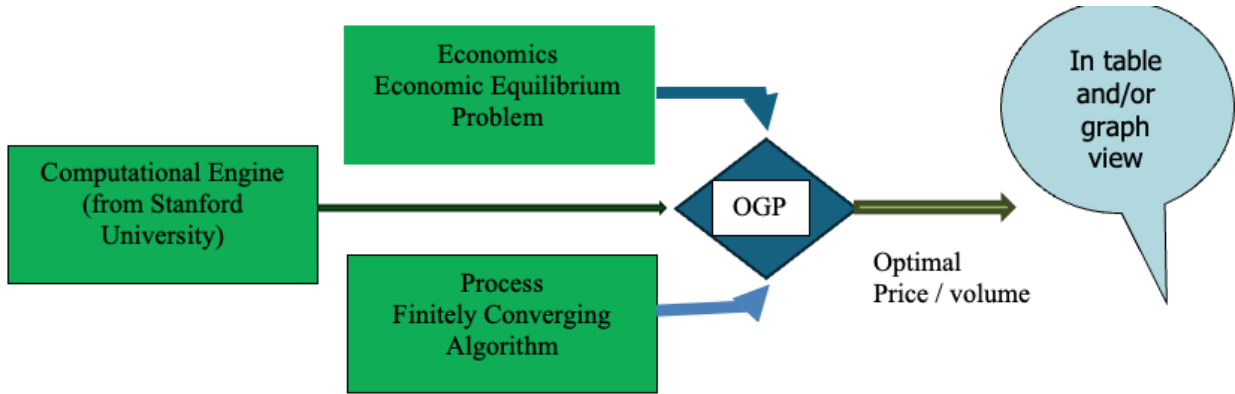


Fig. – Structure of the OGP technology with components ‘Economic Equilibrium Problem’ ‘Computational Engine from Stanford University’ ‘Finitely Converging Algorithm’. Optimal Price / volume solutions is presented in graph and table format.

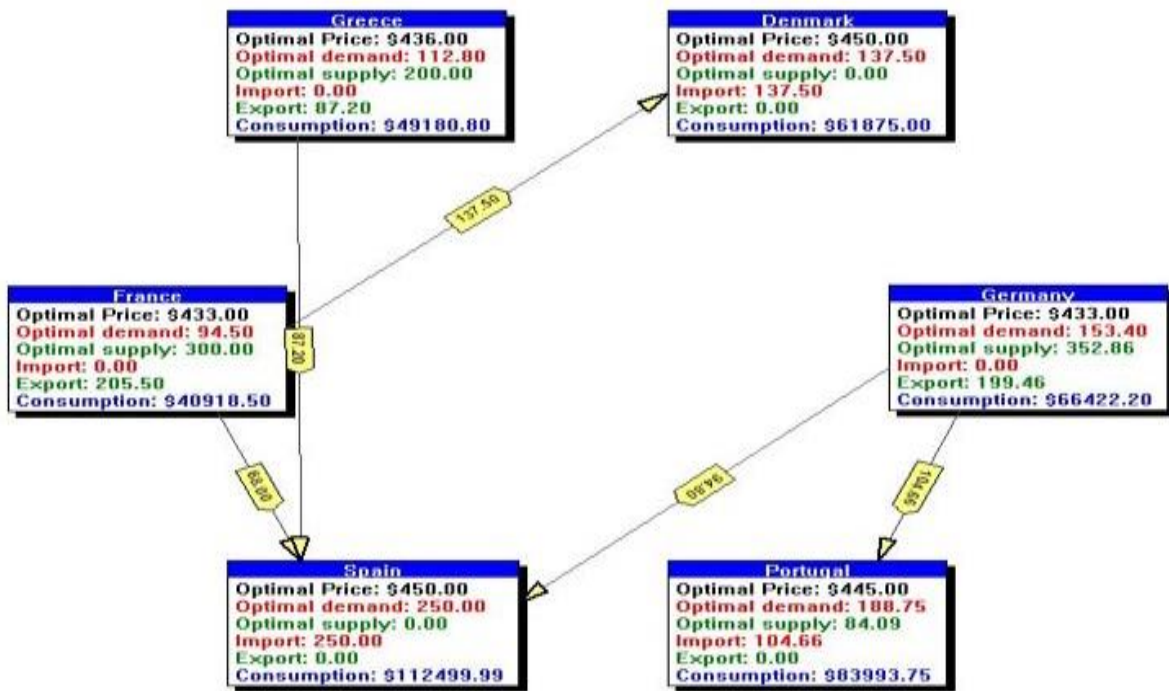


Fig. 2 – Example of an Optimal Solution in graph format: Optimal Price, Optimal Demand, Optimal Supply, Import, Export, Consumption, Trade Flows in directed arrows from-to and amounts traded in the yellow tags.

### 3. RESULTS

OGP technology addresses market arbitrage in the pharma industry by converting nonproductive capital, which exploits global price differentials, into productive capital for producers and consumers. It resolves issues such as parallel trade, which amounts to

\$100–\$200 billion annually, by containing transaction resistance and optimizing launch pricing, inter-regional and inter-temporal competition, and trade and tariff arrangements. This approach helps eliminate bottlenecks in global medicine launches and pricing, ultimately enhancing economic equilibrium and efficiency in the pharma industry.

OGP is resolving a host of marketing problems with presently inadequate solutions:

- containing resistance to flow (resolving the parallel trade problem)
- optimal launch pricing
- evaluating inter-regional and inter-temporal competition
- evaluating alternative trade and tariff arrangements
- evaluating policies combining different levels of quotas, tariffs, export taxes, exchange rates
- simulating producing and consuming markets with various levels of minimum reserve requirements, processing costs, retail markup margins, and minimum prices.
- supporting other pricing and trade-related activities

#### 4. DISCUSSION AND CONCLUSIONS

OGP technology resolves market arbitrage by:

*Converting Nonproductive Capital:* It transforms capital that exploits global price differentials into productive capital for producers and consumers.

*Containing Transactional Resistance:* Incorporating the concept of transactional resistance allows for free evolution and increased access to transactions.

*Optimizing Launch Pricing:* It helps determine optimal pricing strategies for new product launches.

*Evaluating Competition:* It assesses inter-regional and inter-temporal competition to ensure fair pricing and distribution.

*Optimizing Trade and Tariff Arrangements:* It evaluates and optimizes trade policies, tariffs, quotas, export taxes, and exchange rates.

*Simulating Markets:* It simulates producing and consuming markets with various levels of minimum reserve requirements, processing costs, retail markup margins, and minimum prices. What are the applications of OGP technology in other industries? OGP technology has applications in various industries beyond pharma. In addition to the features above, other features *Inter-Regional and Inter-Temporal Competition, Which Evaluates* competition across different regions and time periods.

*Supporting Pricing and Trade Flows:* Facilitating activities related to pricing and trade flows in various industries.

These applications help resolve market arbitrage, enhance economic equilibrium, and improve efficiency in global trade.

#### REFERENCES

1. Scurtu M., Aplicarea teoriei elasticității din fizică la studiul ciclurilor economice ale unei economii de piață la nivel macroeconomic, Academia de Studii Economice, Facultatea Relații Economice Internaționale, edițiile XIX, XX, Sesiunile Cercurilor Științifice Studentești, Aprilie 1975, 1976, Rector.

2. Scurtu M., An Empirical Study of Spatial Economic Equilibria via Geometric Programming, Doctoral Thesis, North Carolina University, Raleigh, USA, 1986.
3. Bejan A., *Freedom and Evolution. Hierarchy in Nature, Society, and Science*, Springer, 2020.
4. Bejan A., *The Physics of Life: The Evolution of Everything*, St. Martin's Press, 2016.
5. Fang S.C., Peterson E.L., Generalized Variational Inequalities, *Journal of Optimization Theory and Applications*, **38**, 3, pp. 363–383 (1982).
6. General Network Equilibrium Analysis, *International Journal of Systems Science*, **14**, 11, pp. 1249–1275 (1983).
7. An Economic Equilibrium Model on a Multi-commodity Network, *International Journal of Systems Science*, **16**, 4, pp. 479–490 (1985).
8. Irwin C.L., Yang W.C., Iteration and Sensitivity for A Spatial Equilibrium Problem with Linear Supply and Demand Functions, *Operations Research*, **30**, 2 (1982).
9. King R.A., Gunn J., Reactive Programming User Manual: A Market Simulating Spatial Equilibrium Algorithm, Economic Research Report, No. 43, Dept. Of Ec. & Bus. NCSU Raleigh N.C., Dec 81.
10. McCarl B.A. et al., Sebend: A computer Algorithm for the Solution of Symmetric Multi-commodity spatial Equilibrium Problems Utilizing Benders Decomposition, Special Report 708, Agricultural Experiment Station Oregon State University, March 1984.
11. The Conical Duality and Complementarity of P and Quantity for Multi-commodity Spatial and Temporal Network Allocation Problems, Center For Math. Studies in Economics and Management Science: Disc, Paper #207, Northwestern University, Evanston, 111, March 1976.
12. Peterson E.L., Eaves B.C., Asmuth R., Computing Economic Equilibria on Affine Networks with Lemke's Algorithm, *Mathematics and Operations Research*, **4**, 3, pp. 209–214 (1979).
13. O'Rourke A.D., Casavant K.L., Interregional and Intertemporal Competition in Fresh Sweet Cherries, College of Agriculture Research Center, Washington State University, Bulletin 803, November 1974.