

Can U.S. import regulations reduce IUU fishing?



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Introduction

- Illegal, unreported and unregulated (IUU) fishing has extensive and significant adverse impacts (FAO, 2003) :
 - Jeopardize the health of fish stocks
 - Distort legal markets
 - Negatively impact consumers' confidence
 - Unfairly compete with the products of law-abiding fishermen, aquaculture producers and seafood producers

Introduction

- US implemented Seafood Import Monitoring Program (SIMP) to prevent, deter, and eliminate IUU fishing (and in some cases poor aquaculture production practices)
- The SIMP makes it mandatory for imports to be accompanied by harvest and landing data and for importers to maintain chain of custody records for shrimp and abalone imports entering the U.S.

Introduction

- As an initial trail, the system was to be implemented for 17 species regarded to be of particular risk.

There were 17 species: Abalone*, Atlantic Cod, Blue Crab (Atlantic), Dolphinfish (Mahi Mahi), Grouper, King Crab (red), Pacific Cod, Red Snapper, Sea Cucumber, Sharks, Shrimp*, Swordfish and Tunas (Albacore, Bigeye, Skipjack, Yellowfin, and Bluefin).

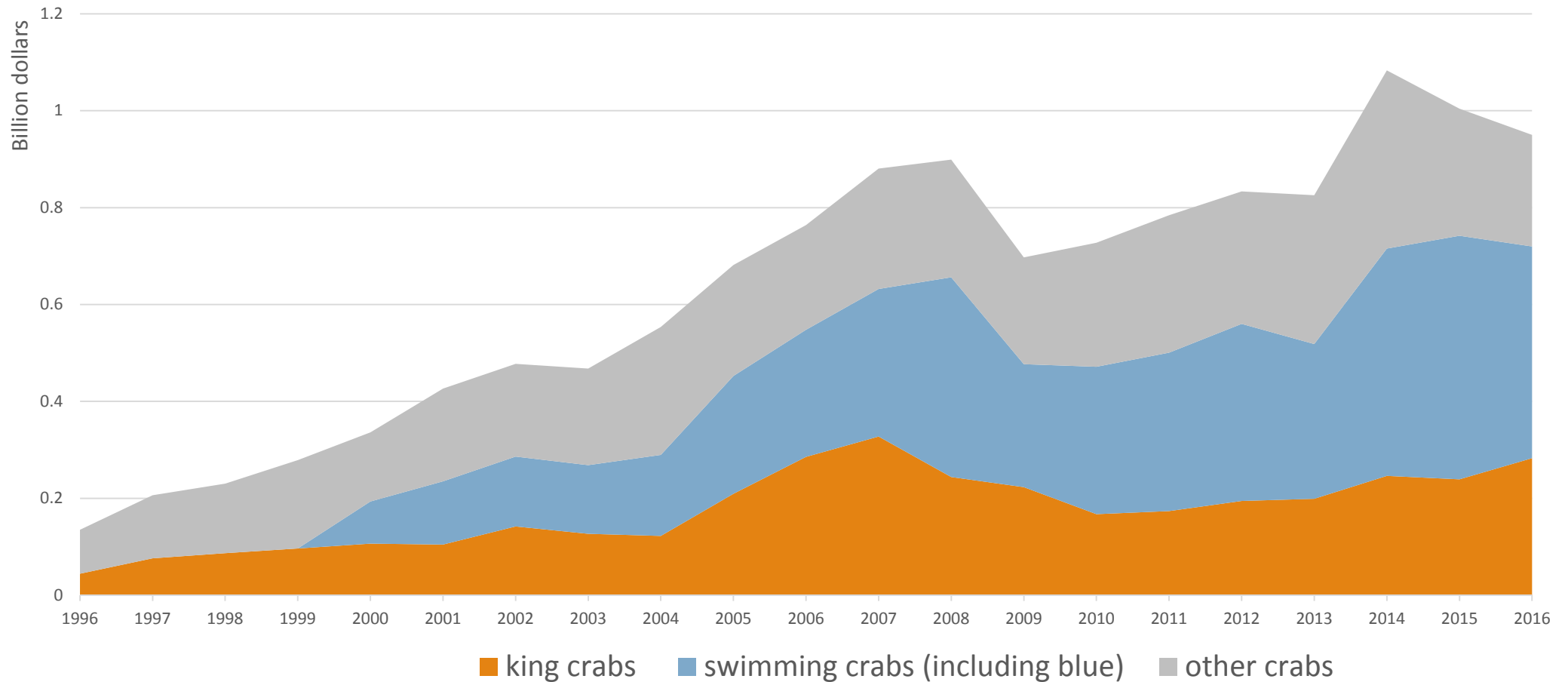
Introduction

- On April 23, 2018, NOAA lifted the stay on shrimp and abalone as similar systems did not exist in U.S. fisheries, which would bring the SIMP into a violation of WTO rules for these species
 - By December 31, 2018, it will be mandatory also for foreign shrimp
- The effectiveness of the trade measure (SIMP) requires that the US as an importer has monopsony or oligopsony power with respect to the exporting countries.

Introduction

- The effect of the SIMP regulation can therefore be measured by testing whether the importing country has oligopsony power relatively to the targeted country.
 - If the US does not have market power, the cost associated with the SIMP will just lead exporters to ship the quantities to other countries. Hence, in this case, the only effect will be higher prices for US consumers.
 - If the US has market power, exporters that lose access to the US market will observe that their price is reduced, and therefore get incentives to comply with the SIMP and reduce IUU fishing.

Crab imports to the US



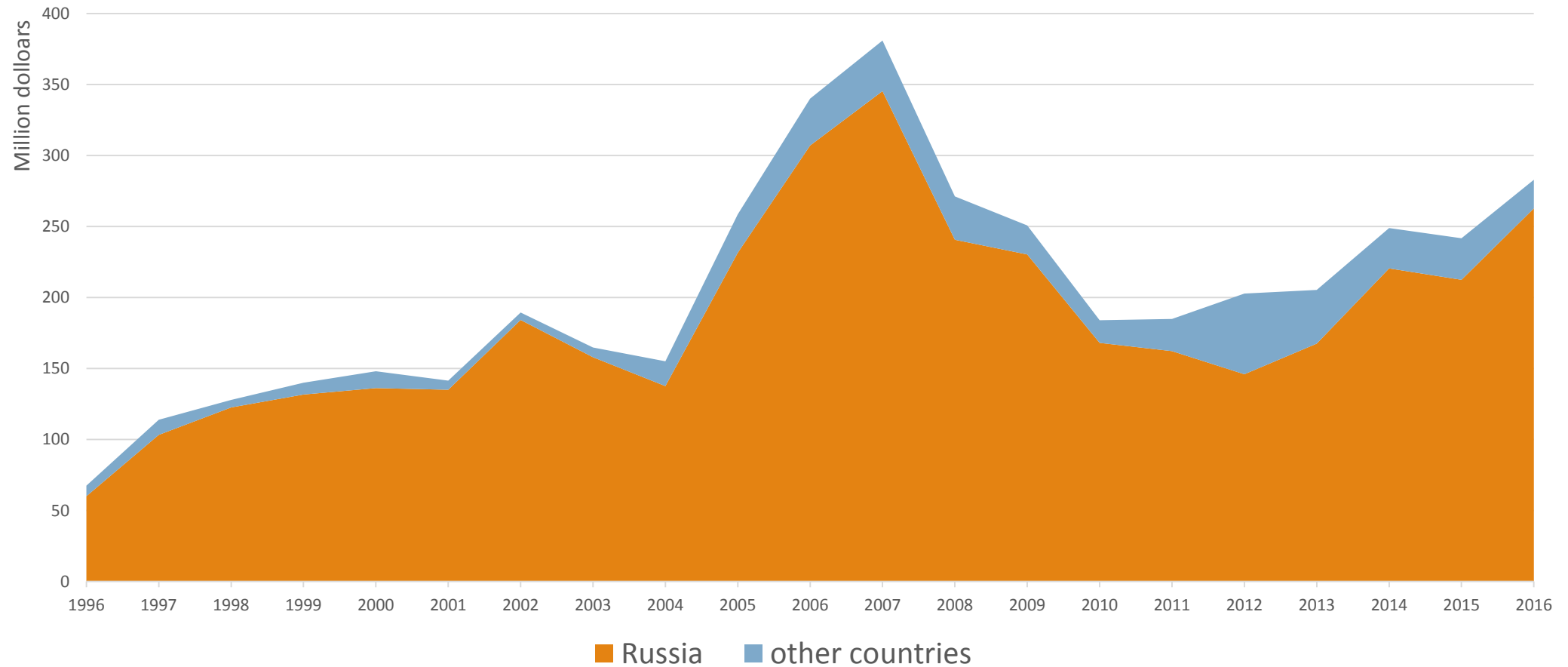


Crab Imports to the US

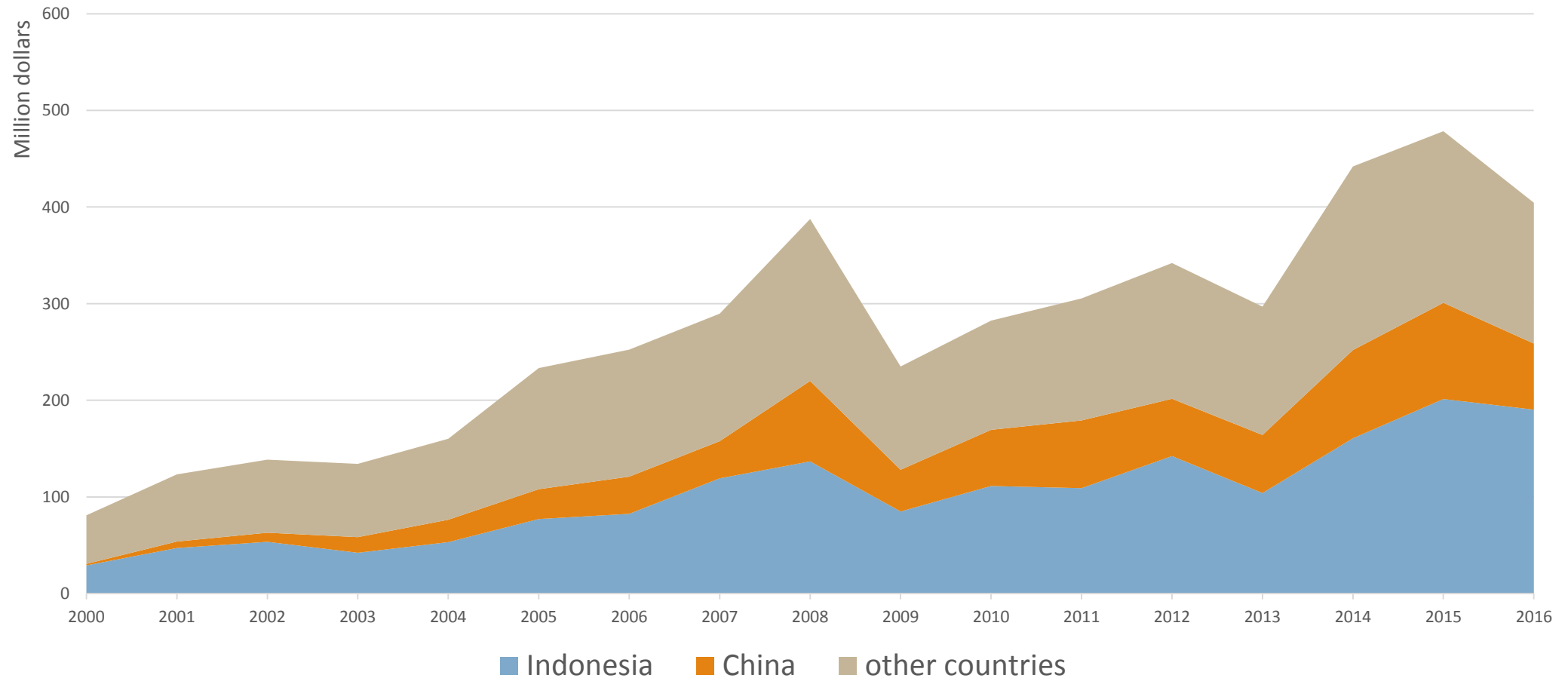
- King crab – Russia supplies more than 80% of the US's king crabs for most of the years.
- Swimming crab (including blue) – Indonesia and China together take more than 60% of the total market values in 2016, also reaching its largest market share level with about 65% of the total crab import quantity.



King crab imports to the US



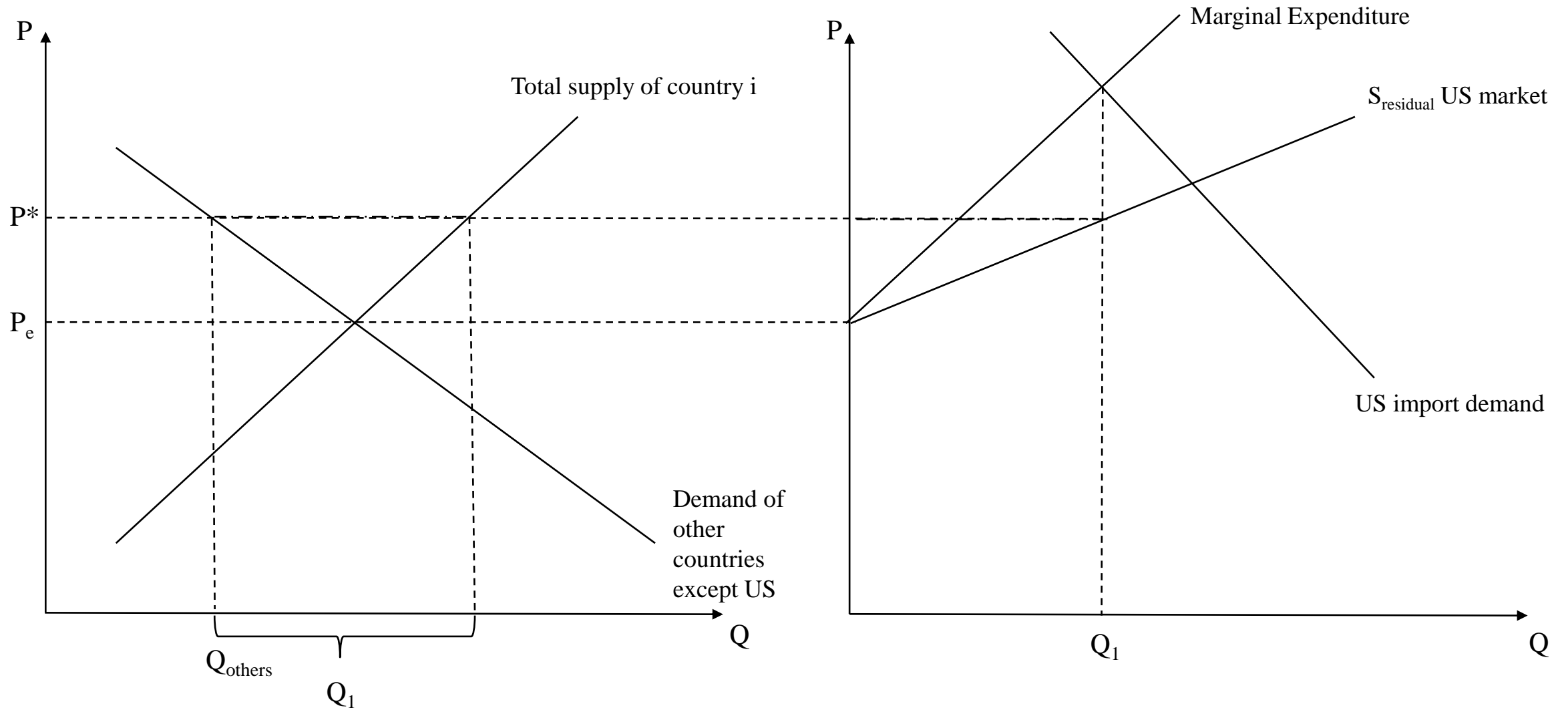
Swimming crab imports to the US



Method

- Here, a residual supply approach will be used.
- A residual supply equation measures the slope of the supply schedule that is faced by a specific agent
- It provides a single equation to be estimated, and is an alternative to cost function or mark-down models in the literature

Residual Supply (Durham and Sexton, 1992)



Residual Supply

- If S^{residual} is flat, then US has no oligopsony power
- If it coincides with the supply schedule – monopsony
- Two scenarios where one cannot exploit oligopsony power
 - Too many importers of the good
 - Competitive export supply of the good
- That competitive export supply prevent the exercise of market power makes it more difficult for buyers than sellers to exercise market power

International trade

- Goldberg and Knetter (1999) expand the residual demand model of Baker and Breshnahan (1988) to an international trade setting. Of key importance is the introduction of exchange rates that also provide good instruments because of high variation.
- We expand the residual supply model of Durham and Sexton (1992) in a similar fashion.

Model specification

- The residual supply equation to be estimated is given as:

$$\ln P_t = \beta_0 + \beta_1 \ln Q_t + \beta_2 \ln S_t + \beta_3 \ln D_t + \varepsilon_t$$

- Export supply shifters are fuel price, crab catch, and wages in exporting country
- Demand shifters for alternative market to the US (eg. Japan). This will be represented by the exchange rate between the exporting country and other importers
- Instruments include US retail price, exchange rate between US and exporting country and wages in the US in addition to lagged dependent variable
- Include seasonal dummies, and estimate with GMM/IV method

Model

- The key parameter of interest is the inverse residual supply elasticity

$$\frac{\partial \ln P}{\partial \ln Q^{im}} = \beta_1$$

- This gives the the residual supply elasticity, which will be zero if the residual supply schedule is flat.
- A statistically significant residual supply elasticity is evidence of buyer power.

Empirical results

VARIABLES (log form)	King crab	Swimming crab	
	Russia	China	Indonesia
Import quantities	0.875*** (0.111)	1.169*** (0.076)	0.590** (0.233)
Fuel price	0.336** (0.131)	0.220** (0.089)	0.202*** (0.050)
Fish catch	-0.343** (0.168)	-0.254 (0.217)	-0.536*** (0.127)
Wage	0.837*** (0.274)	-0.100 (0.193)	-0.274 (0.432)
Exchange rate_1	-0.003 (0.003)	-0.574 (1.828)	-0.006 (0.009)
Exchange rate_2	-2.077 (1.959)	0.066*** (0.021)	0.446*** (0.166)
Exchange rate_3	-0.641 (0.575)	-1.262*** (0.260)	-0.0018 (0.003)
Constant	-2.493 (3.392)	-0.685 (2.780)	0.984 (5.252)
Seasonality	YES	NO	YES
Hansen J	0.153	0.247	0.842
R ²	0.982	0.989	0.842

*** p<0.01
** p<0.05
* p<0.1

Concluding remarks

- The US has a high degree of buyer power for crab imports from Russia, China and Indonesia, despite of the fact that demand shifters from other markets are also important.
- Hence, there is a significant potential for the SIMP requirements to influence the management practices in those countries, and reduce IUU fishing.

Concluding remarks

- Unilateral actions from the U.S. may improve global governance at least for some species.
- If the US can cooperate with other large importing countries, and particularly the EU, trade measures can be an even more effective tool in combating IUU fishing.



Thank you!
