Profit and invisible resource rent in fisheries

ITQs, rent distribution and local communities
Icelandic experiences

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Introduction

- Flaaten, Heen, Salvanes 1995: Invisible Resource rent in limited licence and quota fisheries:
  - Higher net profitability for pelagic vessels with grAtis quotas than with Bought quota
- How is gross rent distributed in a”mature” quota fishery*

1. Background

- “Transferable licenses and quotas given for free to the fishermen may be efficient in reducing the capacity of the fishing fleet, but they are not able to secure future above-normal remuneration for the industry.” (Flaaten, Heen and Salvanes 1995)
- Rationalisation of fisheries to achieve e.g. MEY should be based on operating costs and costs of the physical capital. Financial costs of fishing rights should not be included.
- If financial costs of fishing rights are included in profitability studies and bioeconomic analysis too many “Sunken Billions” will be reported.

- **Hypothesis:** The commonly used business economic indicator return on capital underestimates the social return of managed fish harvesting industries when the value of fishing rights are included in the financial statements.

Model used 1995

	Income from fishing
–	Share to crew
=	Gross revenue to vessel
–	Operating costs (fixed and variable)
=	Gross profit
–	Depreciation
=	Profit
–	Calculated interest on total assets

Table 2. Summary of vessel statistics. Mean values with standard deviation in parenthesis

	All Vessels		A-Vessels		B-Vessels	
	1983	1984	1983	1984	1983	1984
Vessels in sample	43	43	31	31	12	12
Age (years)	21.23 (13.77)	22.23 (13.77)	21.29 (14.12)	22.29 (14.12)	21.08 (13.42)	22.08 (13.42)
Licensed capacity (hl)	6,721 (2,486)	6,721 (2,486)	7,053 (2,218)	7,053 (2,218)	5,863 (3,011)	5,863 (3,011)
Calculated book value	6,079 (7,256)	6,382 (6,885)	5,568 (7,422)	6,023 (7,063)	7,425 (6,931)	7,307 (6,606)
Acquisition value	8,399 (6,814)	8,399 (6,814)	7,877 (7,380)	7,877 (7,380)	9,748 (5,099)	9,748 (5,099)
Market value incl. license	14,779 (7,016)	14,779 (7,016)	15,581 (7,098)	15,581 (7,098)	12,708 (6,638)	12,708 (6,638)
Gross revenue (1,000 NOK)	3,912 (1,761)	4,155 (1,908)	4,160 (1,811)	4,420 (1,913)	3,271 (1,506)	3,471 (1,790)
Operating costs (1,000 NOK)	2,493 (927)	2,440 (971)	2,608 (911)	2,599 (989)	2,196 (941)	2,029 (822)
Calculated depreciation (1,000 NOK)	492 (412)	467 (381)	427 (384)	409 (353)	658 (450)	615 (426)
Calculated interests (1,000 NOK)	760 (907)	798 (861)	695 (928)	753 (8,831)	928 (866)	913 (826)
Rent (1,000 NOK)	167 (1,216)	451 (1,091)	430 (1,085)	659 (876)	–512 (1,316)	–87 (1,419)

Iceland, 2012, following the rent

	Million ISK
Operating revenue	164.397
+income from leasing of fishing rights	
-total operating expenses	-123.252
=Earnings before interest, tax and depreciation (EBITDA)	41.145
-Depriciation	-9.537
+Adjustment for transfer pricing (bestimate)	+15.807
+Adjustment for overprice of labour (bestimate)	+14.682
=Resource rent	62.097
Resource rent tax	10.000

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Iceland, 2012, preliminary attempt to use the classification scheme

	Million ISK
Resource rent	62.097
-resource rent tax	10.000
-calculated interest on equity	3.706
-interest on debt (298.000*,05)	14.812
-accruing to fishermen (bestimate)	14.682
Accruing to vessel owners, net	18.897
Vessel owners	30%
Capital owners	30%
Fishermen	24%
Resource "owners"	16%

Conclusion

- Resource rent does (only partly) show up as excessive yield in fisheries operation
- Resource rent may appear in down-stream activities (fish-processing)
- Resource rent may appear as overprice for inputs (labour)
- Resource rent will accrue to capital owners as interest payments
- An ITQ system with low resource rent tax will demand capital that in turn will increase cost of capital in the economy

INCREASED CONCENTRATION OF QUOTAS TO HARBORS AND VESSELS

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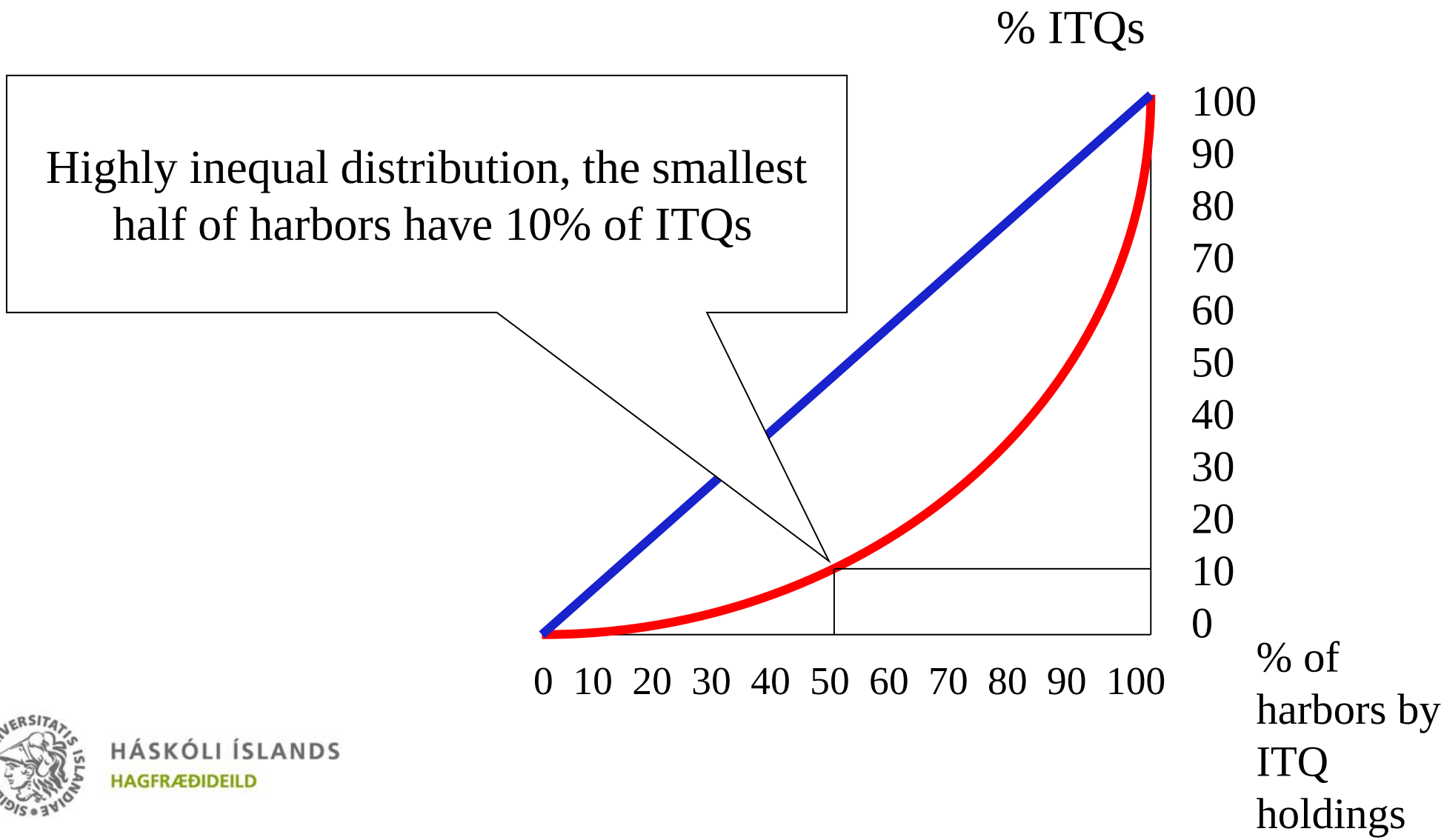
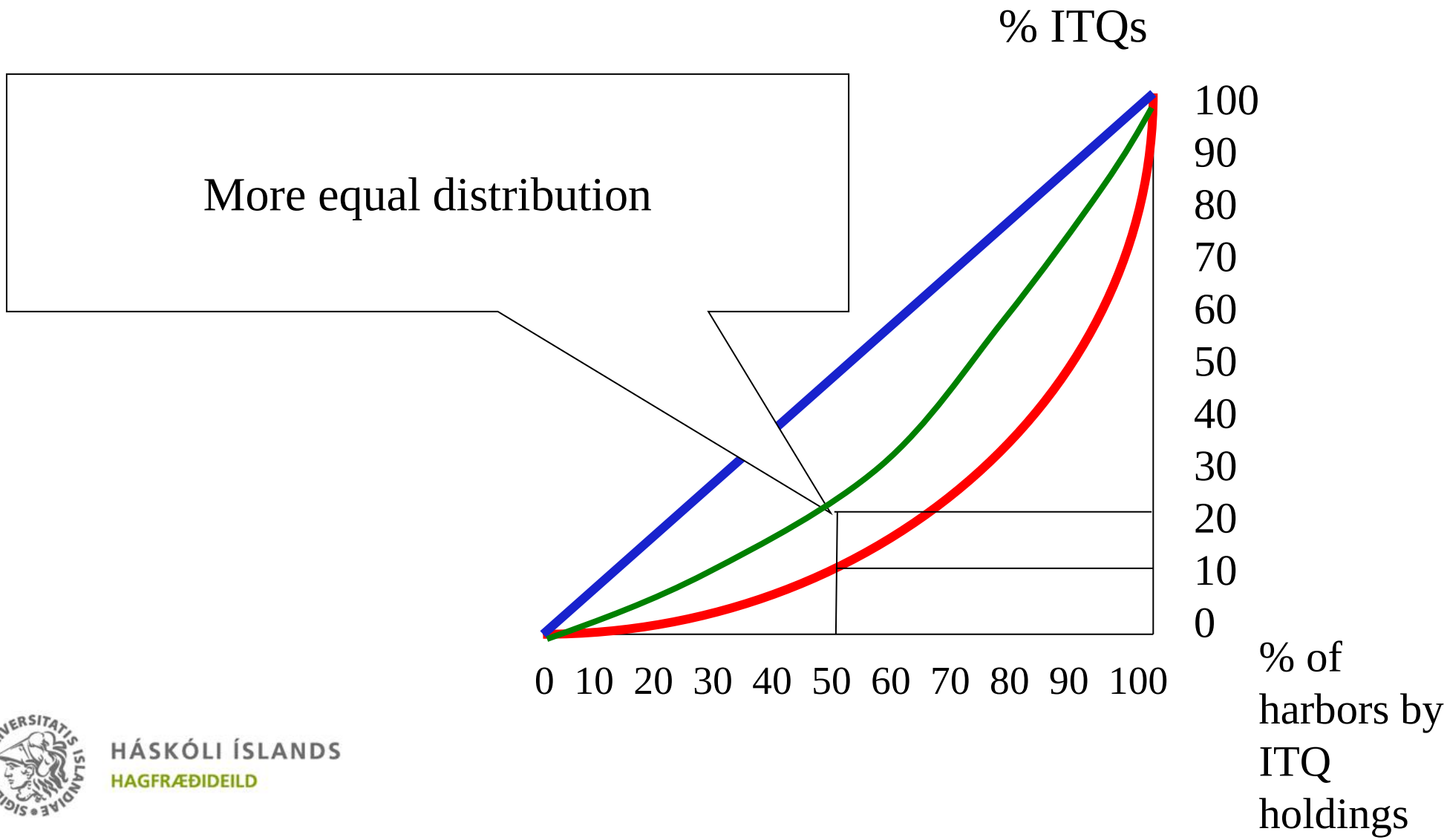
Lorenz-curve

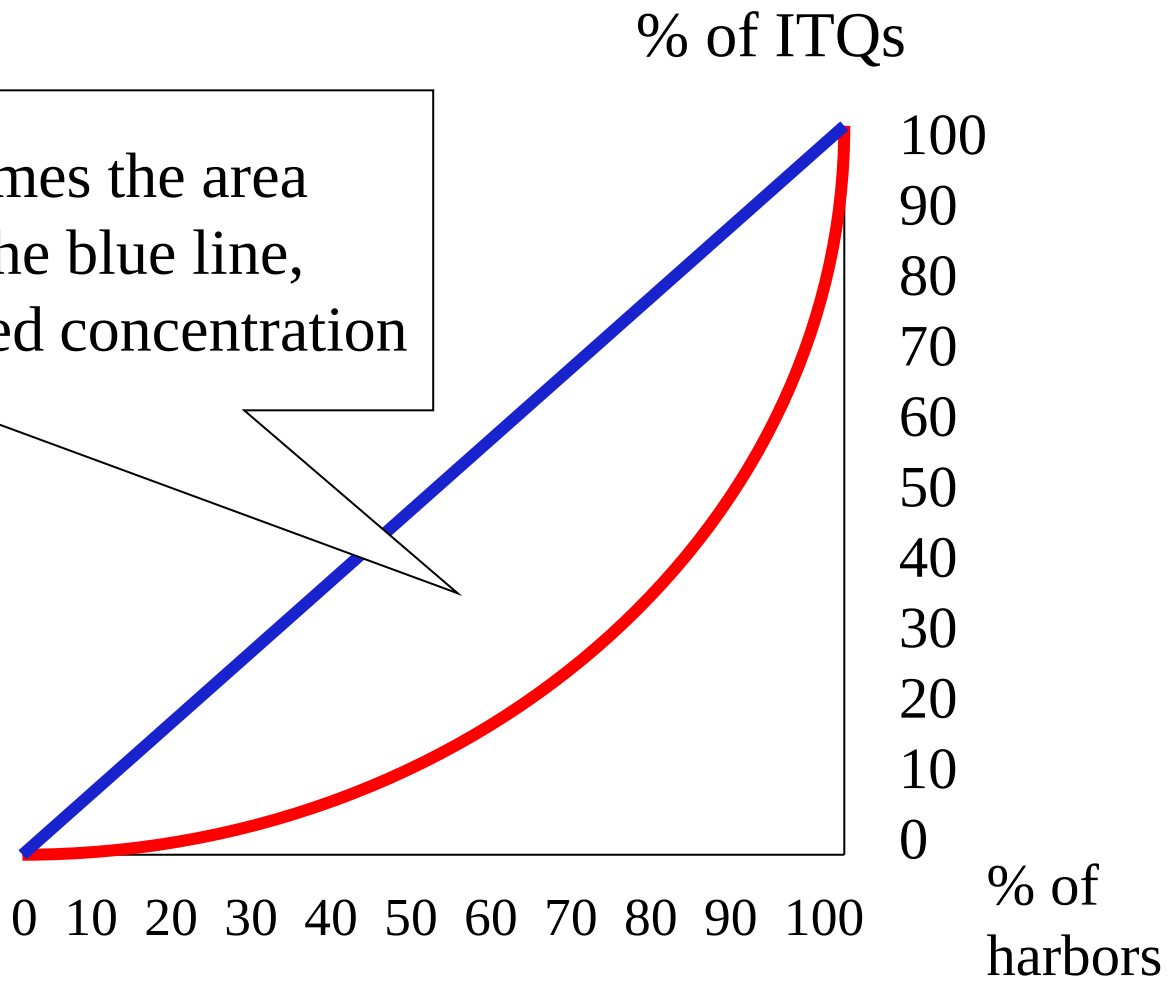


Lorenz-curve



Gini and Lorenz

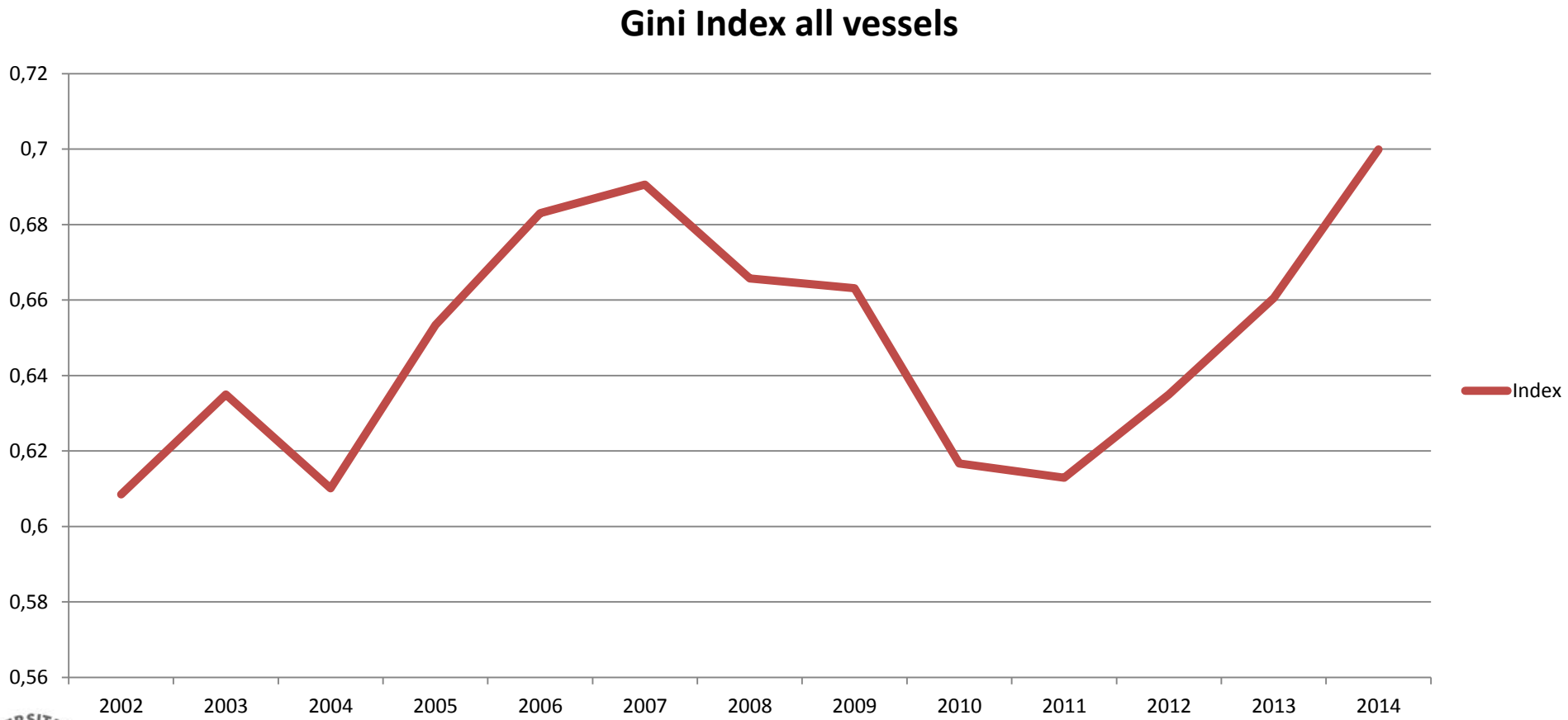
Gini-coefficient is 2 times the area between the red and the blue line, Increased Gini => increased concentration



What to expect from introduction of ITQ in terms of Gini?

- The introduction of ITQ system implies that least effective units disappear
- Will probably increase concentration (higher Gini index)
- Is there a steady-state Gini? Depends!
- So it is interesting to see how the Gini develops!

Gini index distribution per vessel, all vessels



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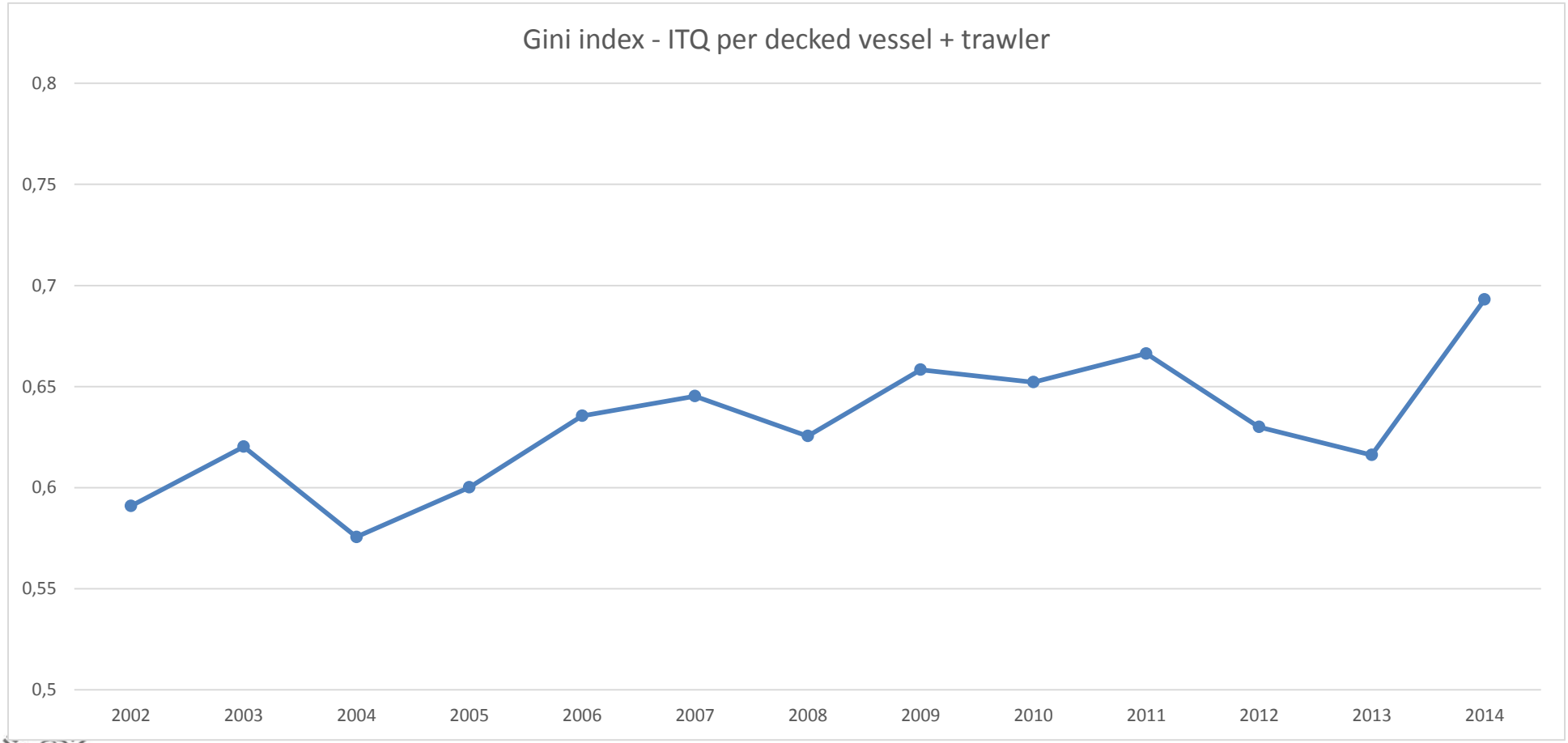
Gini index for big-fleet



Lessons

- Increase in concentration within regions
- Increase in concentration within the “big” fleet
- Introduction of “near-shore” fisheries accelerates tendency of more equal distribution for the whole fleet for a while, then concentration increases again

DISTRIBUTION OF QUOTAS TO HARBOURS AND DISTRICTS

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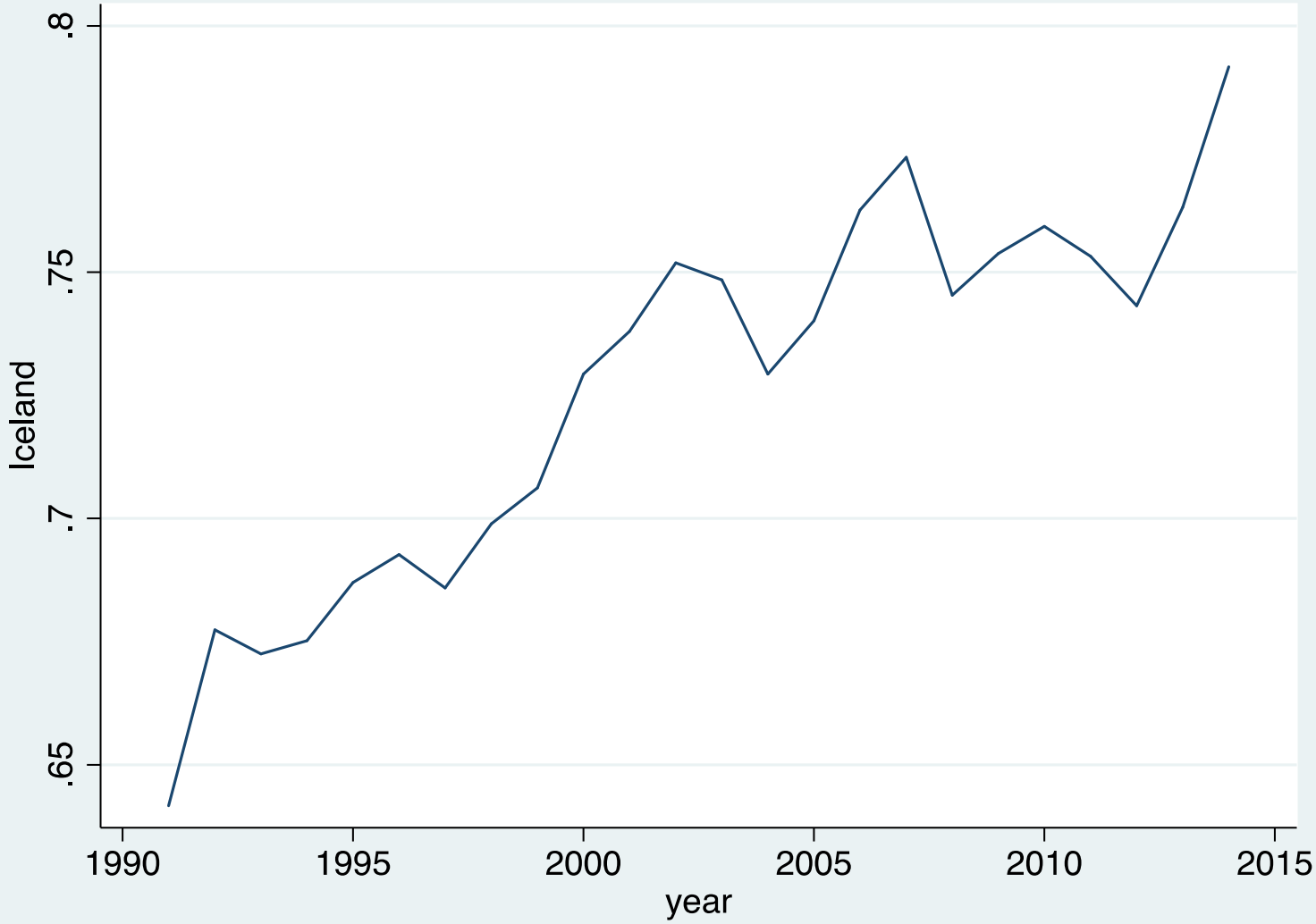
Increased concentration of quotas per harbours



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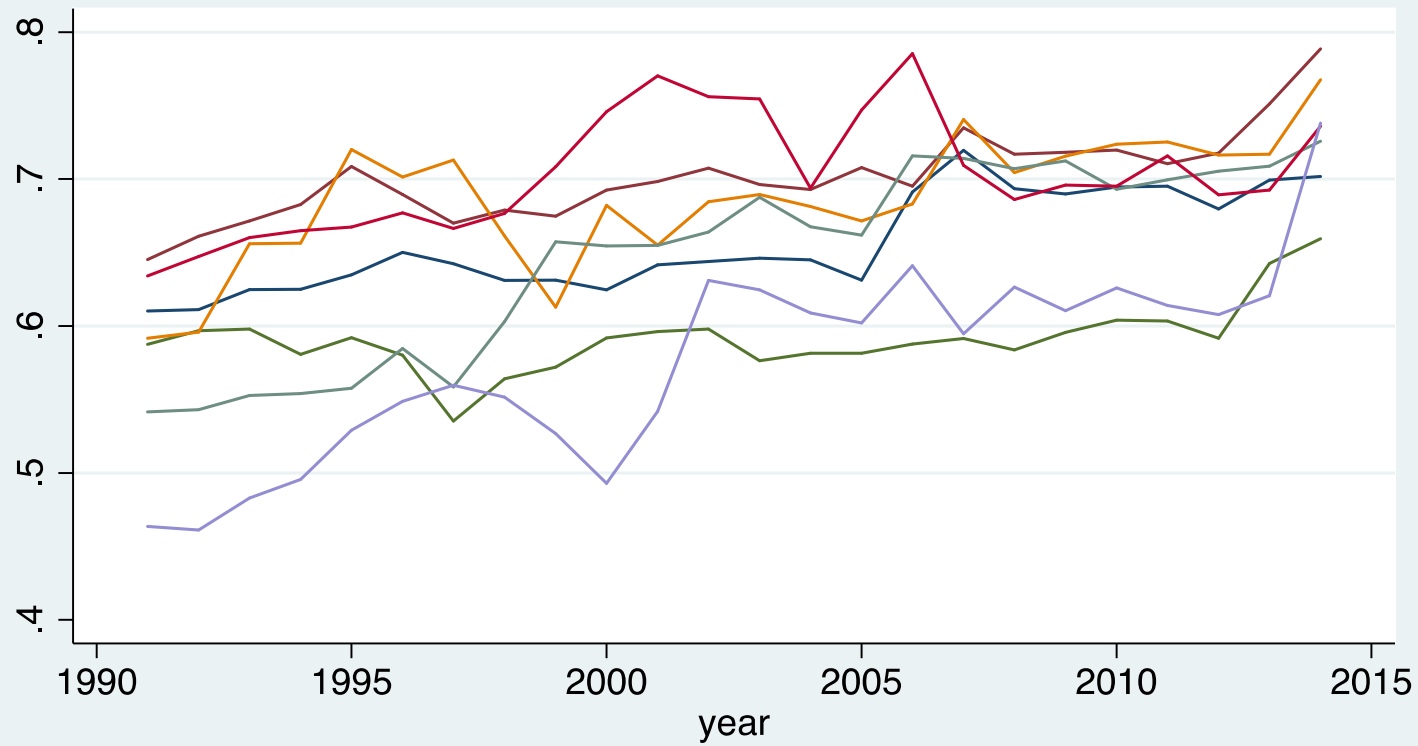
Iceland as a whole, distribution per harbor

- Steep increase of concentration from 1990 until 2002
- Levels until 2013
- Increasing again?
- Effect of introduction of Derby quota for small scale vessels in 2010?

EIceland most like whole



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INCREASED CONCENTRATION, CAUSES AND CONSEQUENCES

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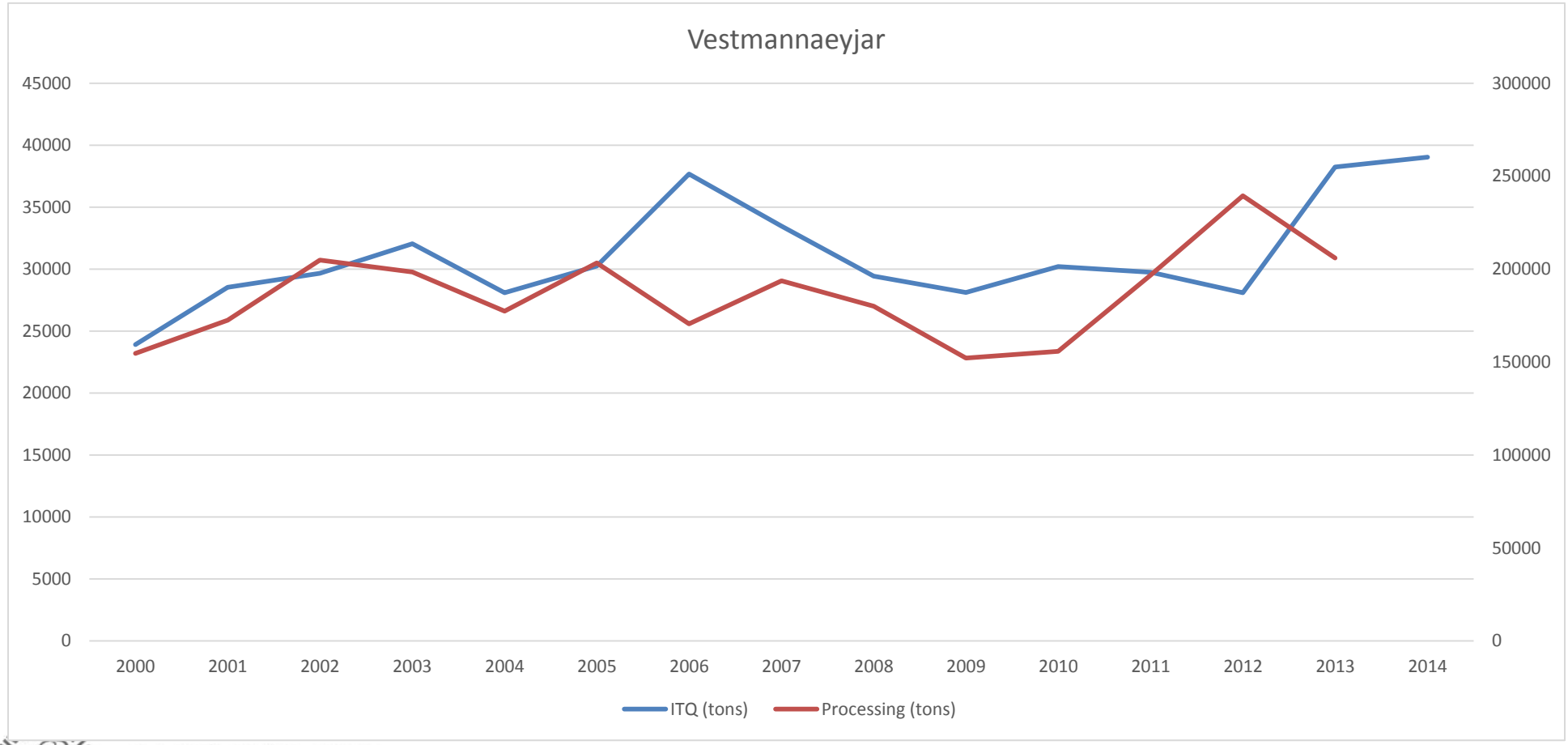
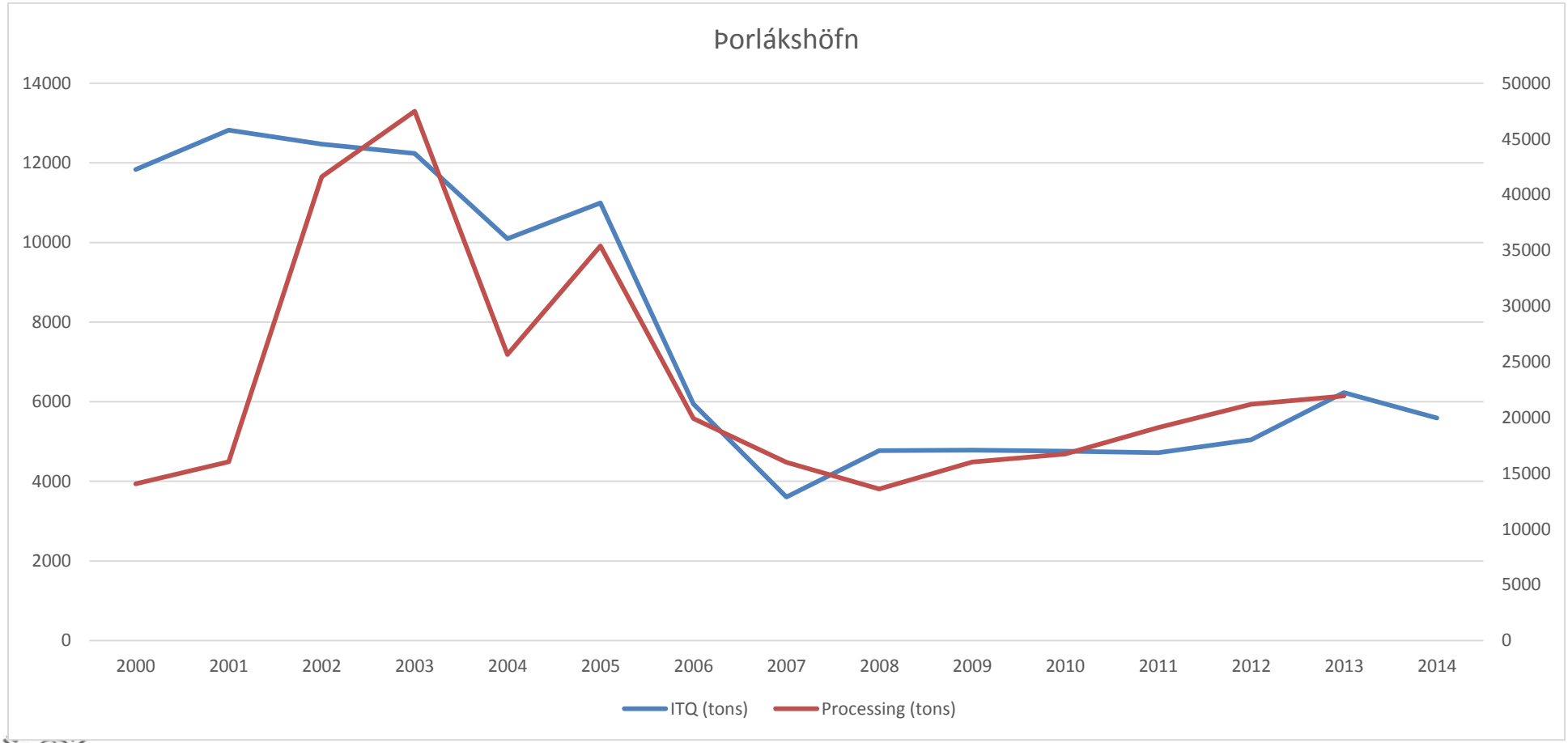
Causes

- Quotas tend to be processed “at home”
  - Net decline of quota in a location reduces demand for labour
- Increased concentration of quotas per harbours can be a social problem
- Increased concentration of quotas per vessels is a technical problem
  - Does not necessarily affect distribution per harbour

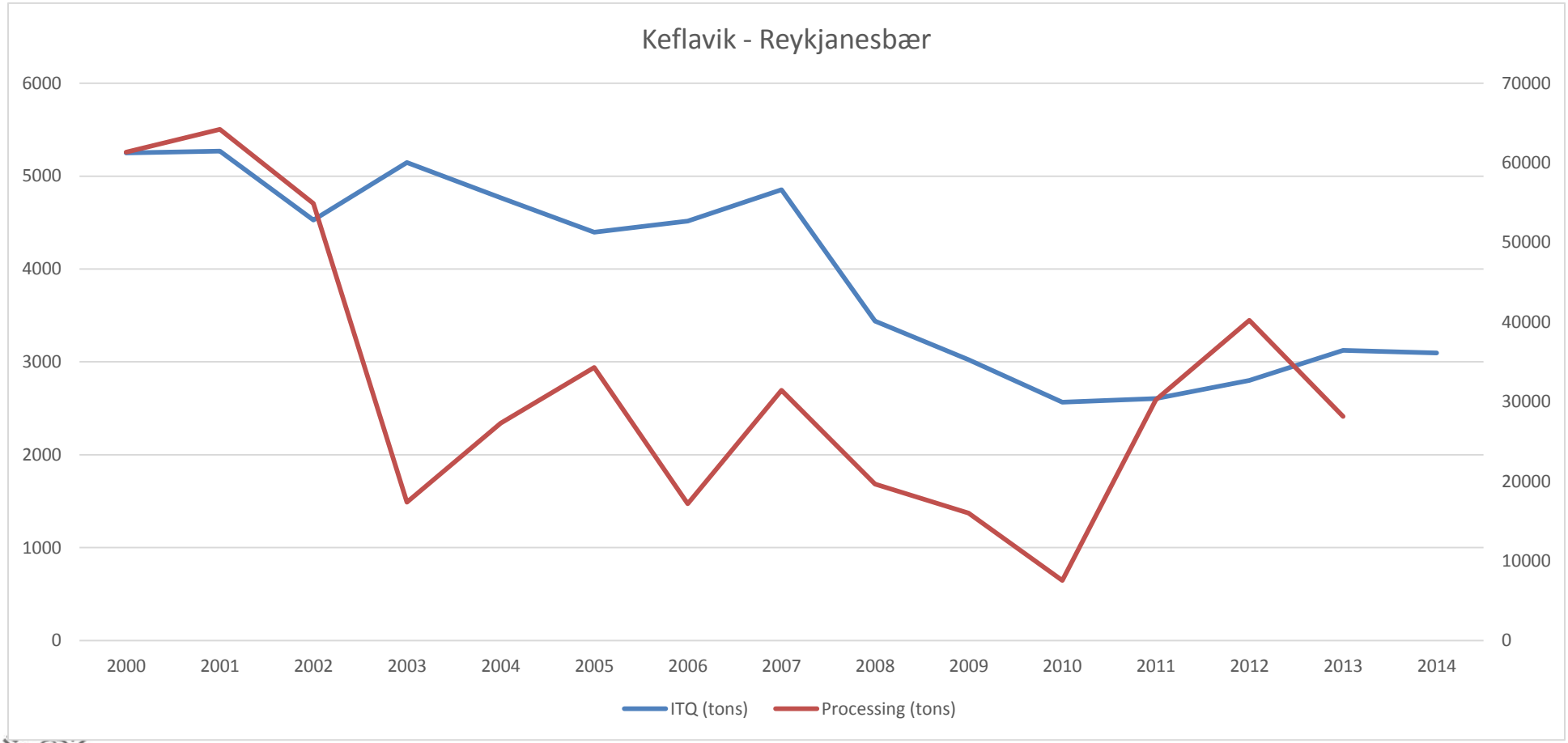
Strong connection between processing and quotas



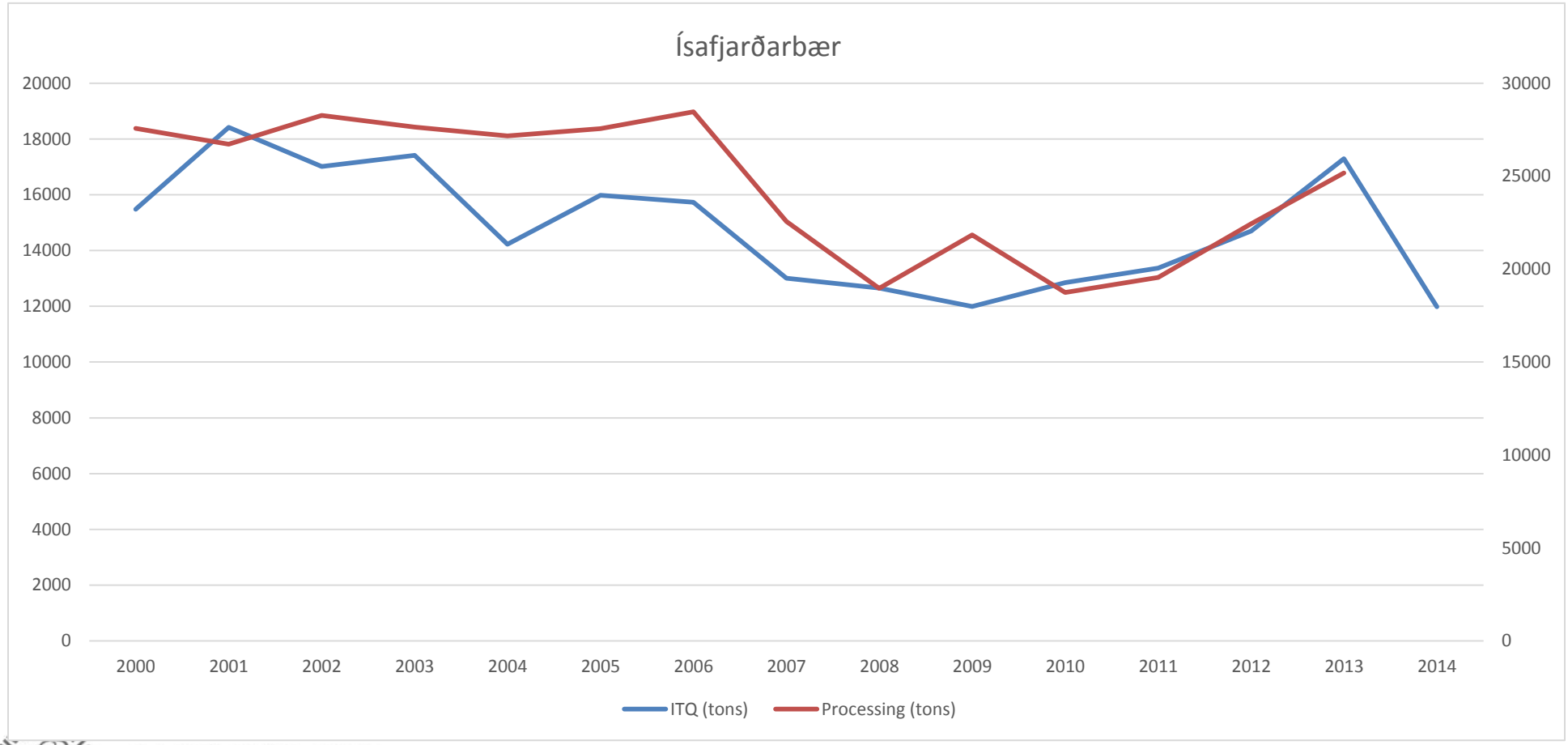
Quota and Processing



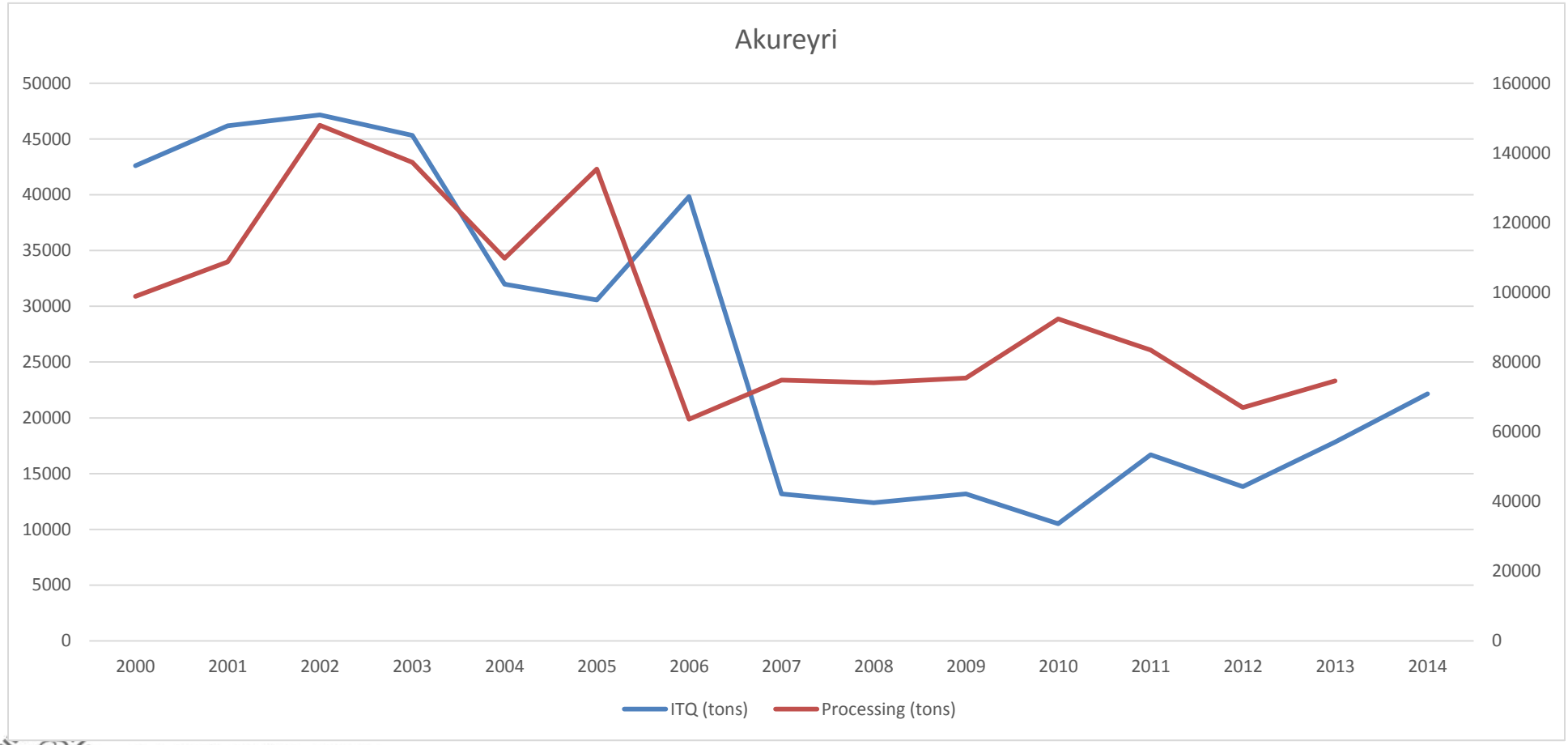
Quotas and Processing



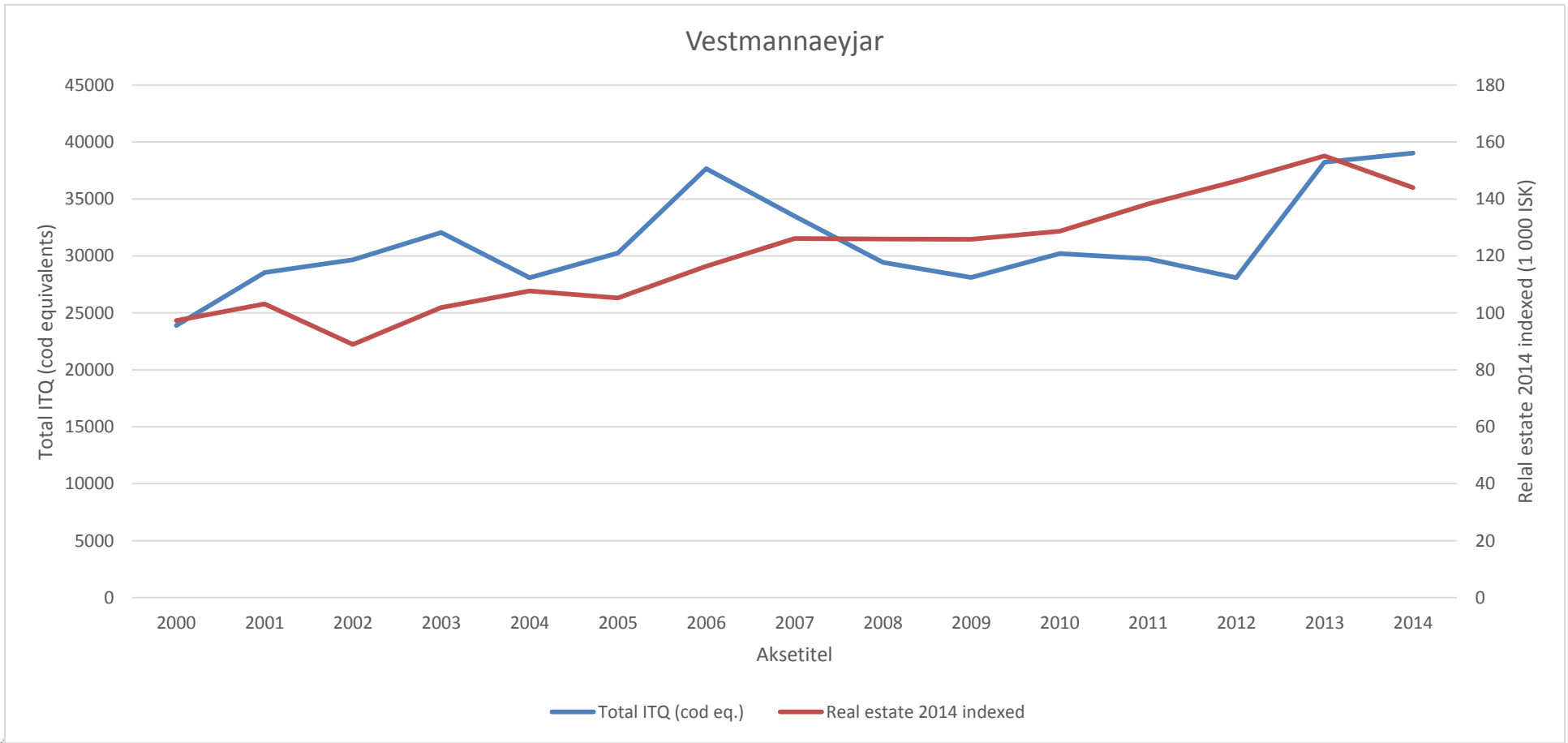
Quota and Processing



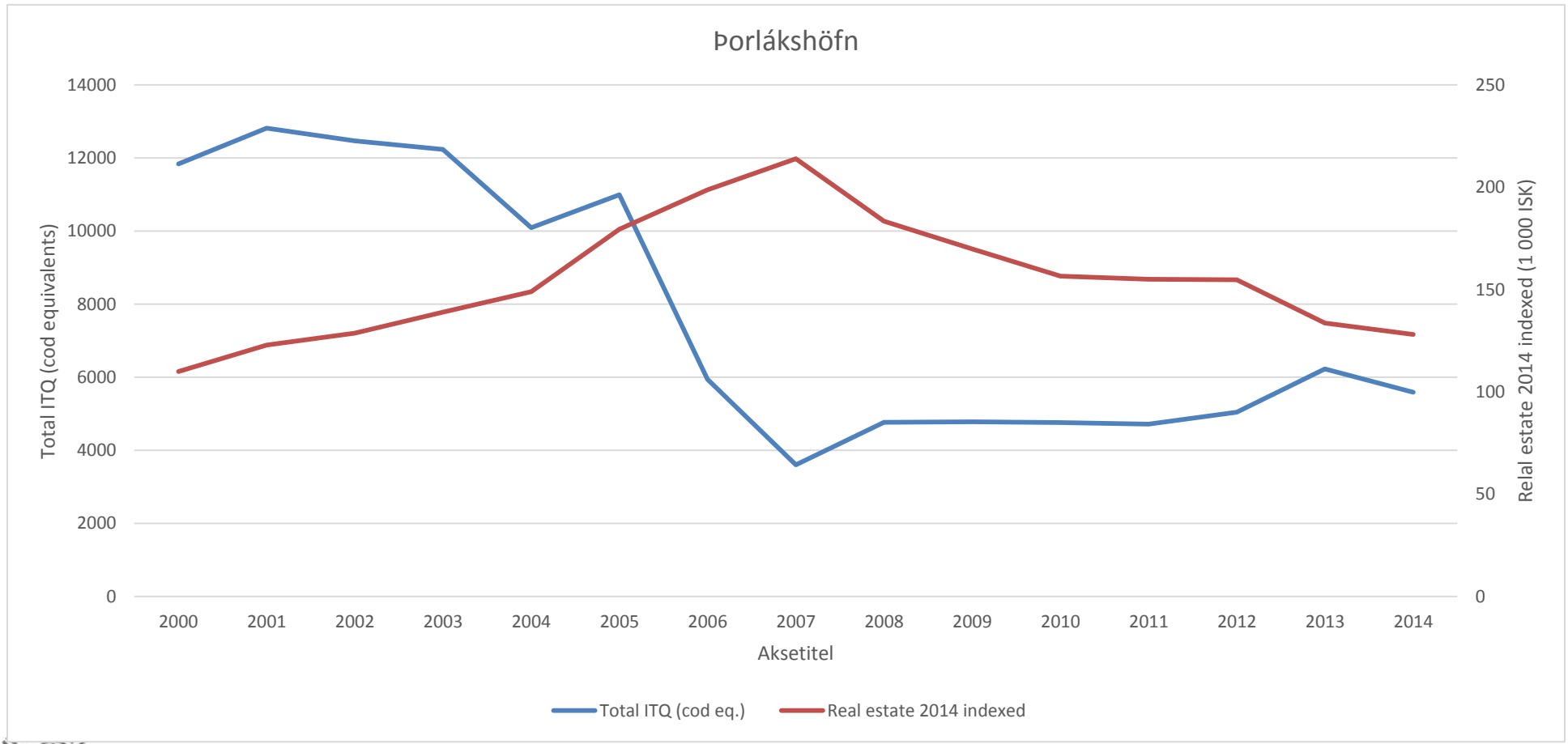
Quota and processing



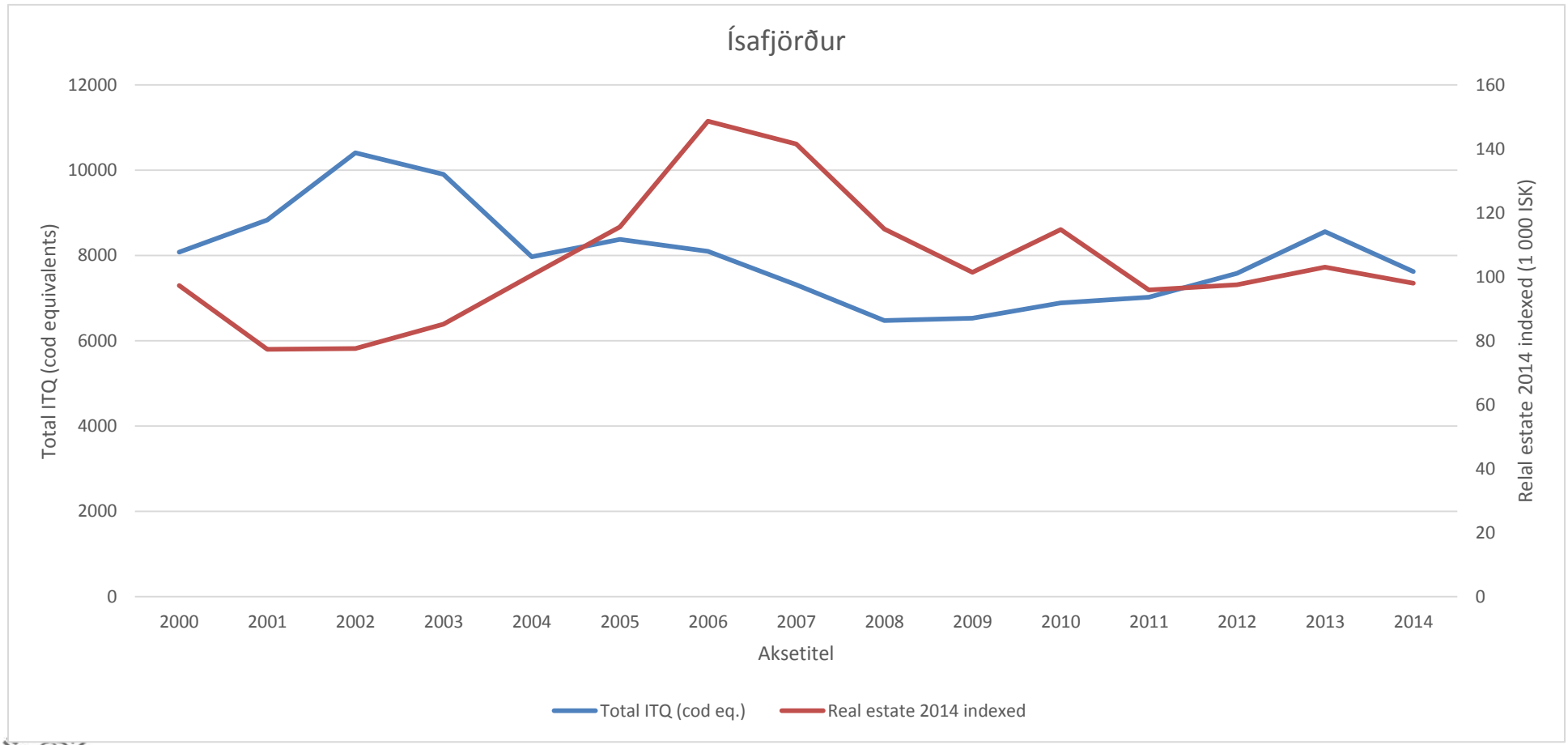
Real estate price and quota, Vestmannaeyjar (small)



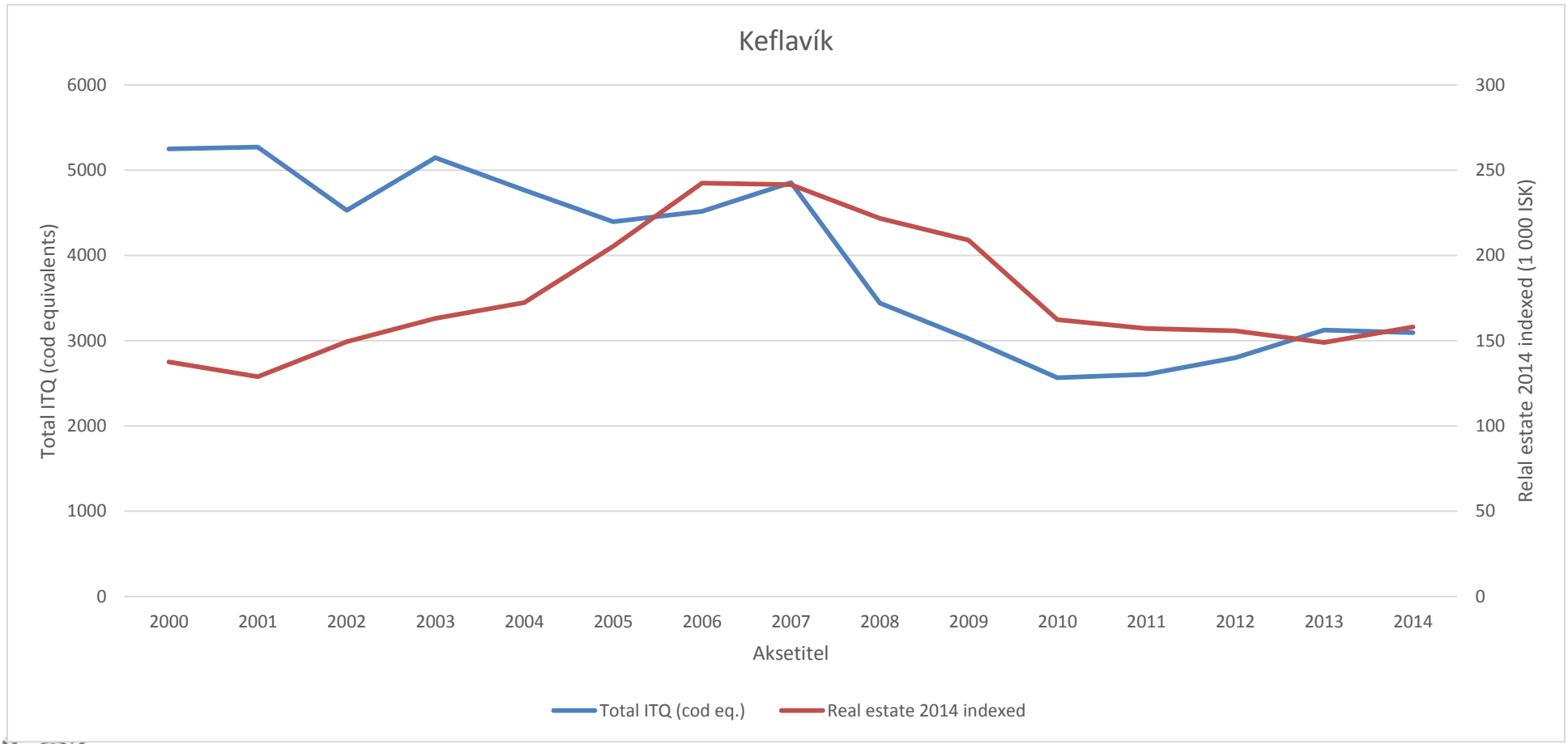
Real estate and quotas, Þorlákshöfn (small but not isolated)



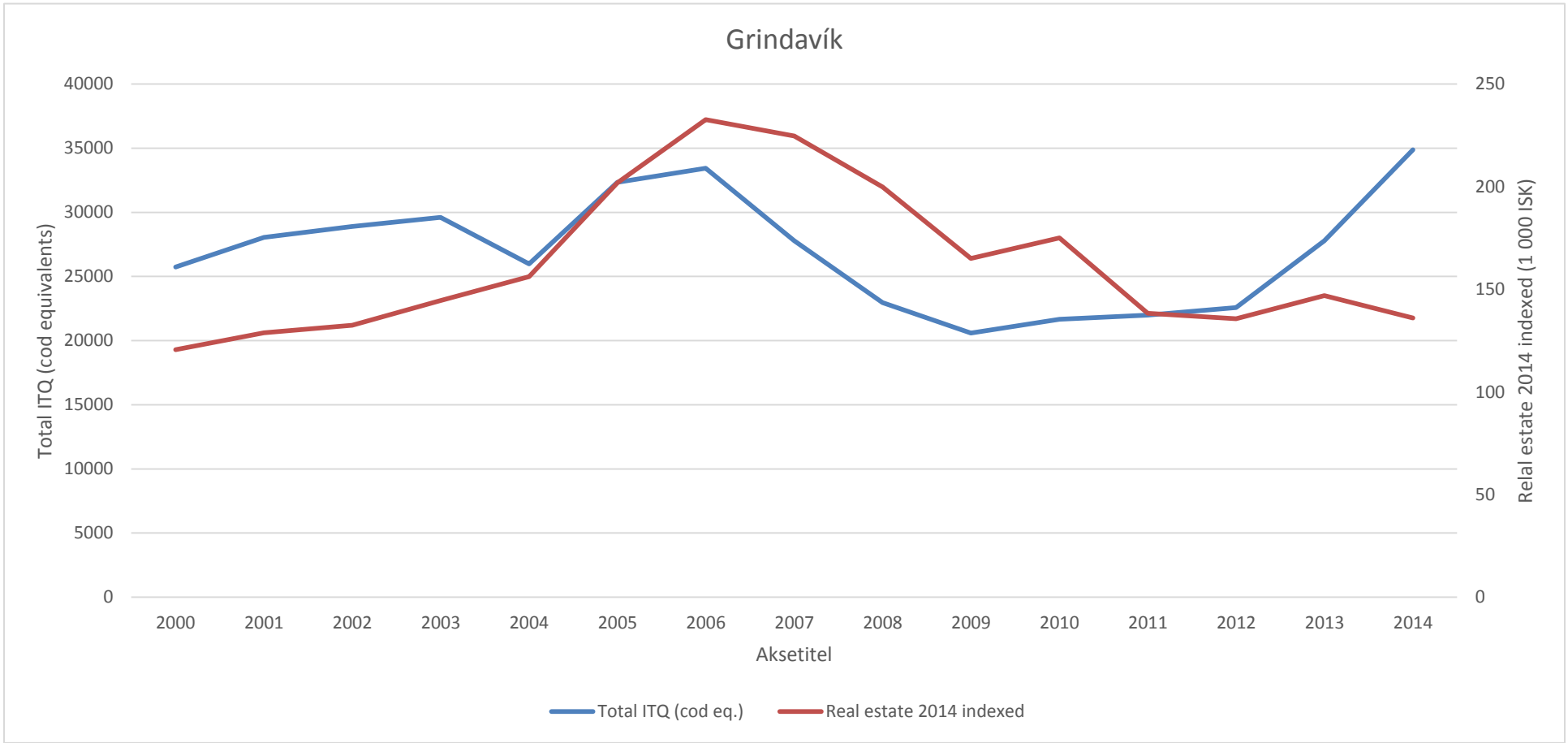
Real estate and quota, Ísafjörður (small and isolated)



Quota and real estate, Keflavík (medium size, but problems…)



Quotas and real estate, Grindavik, small, not isolated)



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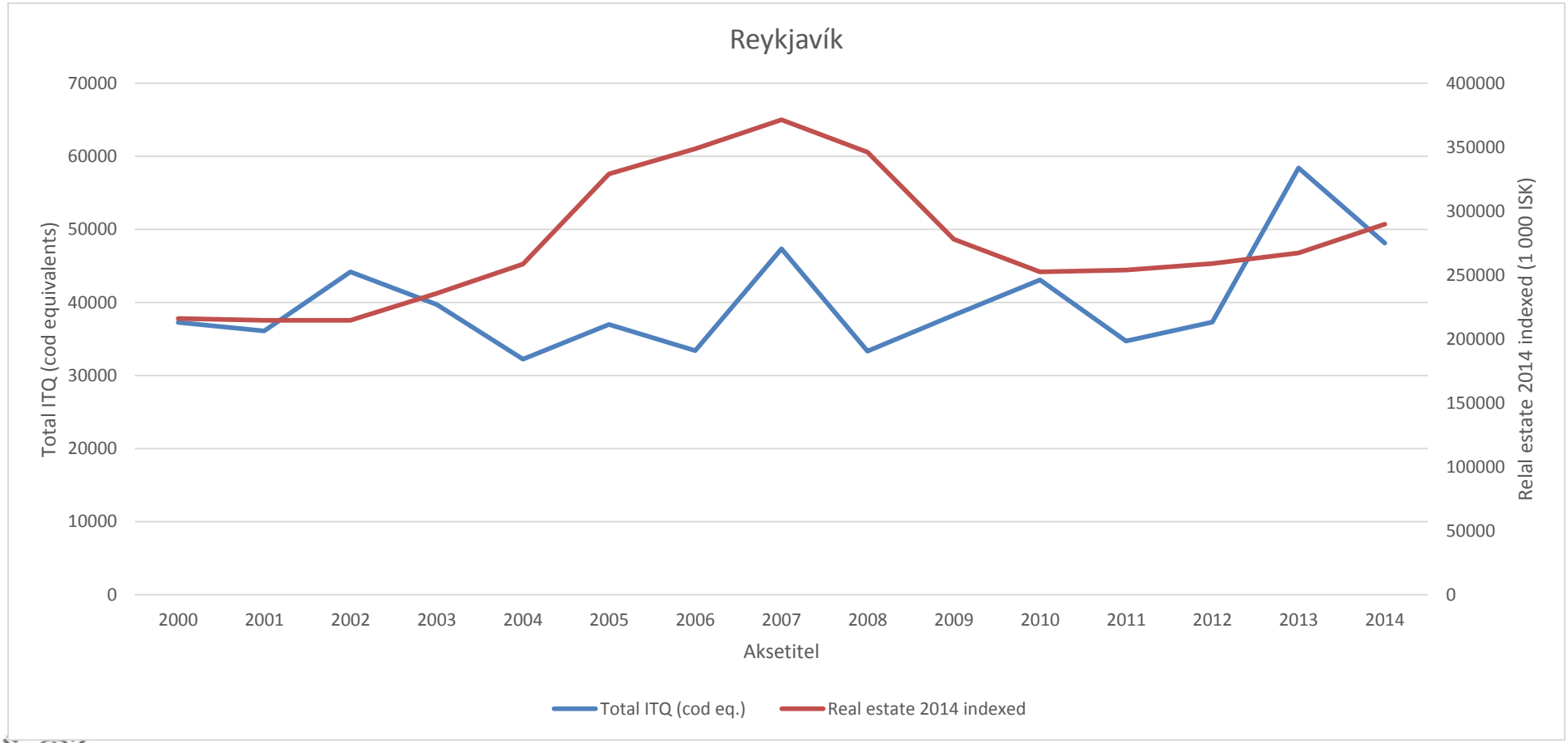
To compare!, Reykjavík, bubble….



Conclusions

- ITQ system in Iceland generates considerable amount of rents
  - Most of the rent accrues to vessel owners and capital providers
  - Fishermen grab some of the rent
  - Share of public purse (owner of the resource) is small

Conclusions

- Distribution of quotas post introduction of ITQ is more concentrated both on harbours and on vessels
- Real estate values move in some degree in tandem with the quota situation in small communities. Does not apply in bigger setting