

DO INCOME DIFFERENTIALS INFLUENCE THE FLOW OF MIGRANT WORKERS FROM THE PHILIPPINES?

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The emigration of Filipino workers is explained with an "international" variant of Harris-Todaro migration model for developing countries. It is hypothesized that the decision to emigrate is a function of the expected income differential between the origin and destination countries, net of moving costs (intermediation expense, transportation costs). Using a log-linear emigration function and employing data from the 1988 Philippine national demographic survey, regression results suggest that the higher the income differential (and the lower the moving costs), the higher the tendency to emigrate. In order to stem the flow of Filipino technical and professional workers and avoid critical shortages in the supply of skills and services, an appropriate policy choice is to provide subsidy-financed incentives that would require "keying" wages to concrete performance standards at the firm level. That should spur a "newly-industrializing" type of growth—which is the key to minimizing serious imbalances in economic opportunities between the Philippines and other countries.

Introduction

Contrary to expectations, Filipino emigration has grown rather than declined. Recent international migration statistics suggest that the level of migration flows has been quite high, especially in the late 1980s, when the number of Filipino overseas contract workers breached the half million mark. There is enough

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evidence to indicate, on the supply side, that in spite of the recent economic upswing in the Philippines, low income levels have maintained the pressures for emigration, and that the contraction or expansion of "contract migration" is occasioned more by fluctuations on the demand side. Exogenous factors, such as the presence of a large labor market in the Gulf Region, are widely believed to have caused the recent upsurge in the demand for Filipino labor. Filipino emigration follows a global pattern in which the major destination countries are high-income countries and the largest exporters of labor are less developed countries, suggesting economic considerations guide migration decisions. Despite this explanation, little is really known about specific economic variables that determine or condition international migration. There is an urgent need to specify more accurately the linkages between such factors and emigration.

In this contribution, a key economic determinant of emigration — income differentials — is examined. It is hypothesized that the decision to emigrate is a function of the expected income differential between source and receiving countries, along the lines proposed by Todaro (1986). The importance of income differentials is underlined by the fact that economic policies here and abroad that impact on either home incomes or destination incomes directly or indirectly affect the mobility of Filipino emigrants. In turn, emigration will conceivably change the configuration and size of geographic and sectoral economic activity and income distribution itself. A more appropriate policy design that takes into account the complex relationship between emigration and economic variables is thus needed to maximize the economic gains (minimize the losses) that the country derives (absorbs) from international migration.

Past Studies

Several studies illustrate the importance of income differentials in the decision to emigrate. In Nguyen (1989), an analytical approach — incorporating the decisions of undocumented foreign workers along the Harris-Todaro formulation — is developed based on the idea of illegal aliens as

INCOME DIFFERENTIALS AND MIGRATORY FLOWS

a parallel market in the US coexisting with the regular labor market. Nguyen argues that risk-neutral foreign workers will illegally cross the US border up to the point where their home wages match the expected wages of undocumented aliens "who have made it" inside the country of destination (net of smuggling costs which are assumed to be zero). Borjas (1987) suggests that in the context of an income-maximizing model, what determines the extent of migration is the differences in mean income levels between home and host countries, net of migration costs which are both monetary and psychic. These mobility costs create the selection biases that ensure that wholesale migrations from countries with low income levels will not take place.

Income disparities induce cross-border movements, and each country may be both a supplier and receiver of migrant workers, depending on its position in the world income ladder (Abella, 1992). A case in point, according to Abella, is Taiwan, which hosts Filipino workers but supplies its own labor to Japan. The reason is that wages in Japan are 16 times those in the Philippines; those in Taiwan are about five times. In the same vein, South Korean workers no longer seek jobs in foreign countries, except in Japan, because home wages have exceeded international rates (Vasquez, 1992). As long as potential foreign earnings exceed local wages (after subtracting the costs of job placement), workers will respond positively to the higher foreign wage rate (Abrera-Mangahas, 1988; Abella, 1988).

The Model

Following Todaro (1986), the emigration of Filipino workers is explained with an "international" variant of the Harris-Todaro migration model for developing countries (Harris and Todaro, 1971). In the model, emigration is a function of the expected income differential—actual differential adjusted for the probability of finding employment in the destination country—between the origin and destination countries. The migration process goes on continuously, and stops only when the income differential has equalled the equilibrium

supply price of labor. It is the labor emigration flow that equates expected incomes at home and abroad which acts as an equilibrating force.

The equation for emigration implicitly depends on labor shortages in destination countries but not necessarily on labor surpluses in home countries, as is commonly assumed. MacPhee and Hassan (1990) attribute both surpluses and shortages to country-specific differences between supply of and demand for labor, which in turn "persist" because of information lags and high recontracting costs that prevent employers from adjusting wages rapidly. In a developing country such as the Philippines, however, the more likely situation is that supply-demand differences arise as a result of difficulties in drawing existing labor migration trends into line with the spatial distribution of production factors, chiefly land and capital. Urban job creation policies may in fact aggravate urban unemployment as a result of increased internal migration induced by large urban-rural income differentials. Rural outmigration, for instance, will likely occur even in the absence of labor surpluses as long as the expected income differentials exist. Labor shortages can exist despite high levels of unemployment in urban areas.

Although the model is in aggregate form, it does "incorporate" both macro-level and micro-level factors within a singly neoclassical decision-theoretic framework. The individual's decision to emigrate is the building block for the construction of a migration framework which explains labor emigration as an attempt to even out "expected" returns to factors. The model is consistent with the human capital approach, which assumes that an individual is more likely to be a "mover" than a "stayer" if he expects positive returns from moving, counting both income benefits and moving costs.

It is hypothesized that the emigration rate is a function of moving costs as well as income differentials between source and receiving countries. Migration costs include, among others, job intermediation expense, and

INCOME DIFFERENTIALS AND MIGRATORY FLOWS

transportation costs. Job intermediaries in the Philippines, such as recruitment agencies, facilitate the emigration process in various ways, providing services such as securing visas, travel arrangements, government approvals, remittance banking, training and skills development services, and insurance (Abrera-Mangahas, 1988). Mobility costs reflect economic moving costs: the longer the route, the higher the costs, and the harder it is to emigrate. The model also includes variables that depict economic conditions in the country of origin (e.g., income inequality) and variables which describe characteristics of the migrant population (e.g., English proficiency) that are likely to impact on their earnings as emigrants.

An extended Harris-Todaro model that deals with emigration can be expressed in the following form (Todaro, 1986):

$$\frac{M_{ij}(t)}{L_i} = F \left[\frac{V_j(t) - V_i(t)}{V_i(t)} \right]$$

where:

- M_{ij} : labor emigration in period t ;
- L_i : existing size of the labor force in the home region or country;
- $V_j(t)$: discounted present value of the potential international migrant's real income stream during his stay in the foreign sector;
- $V_i(t)$: discounted present value of the actual income in the home region or country, from $t = 0$ to $t = n$, should the individual choose to remain there.

As can be seen, $F(\cdot)$ is a function of actual income differentials net of the cost of migration.

In the destination country, expected income (V_j), from $t = 0$ to $t = n$ is a function of real or average earnings (Y_j), the probability of taking a foreign job (P_j) from $t = 0$ to $t = n$, and mobility costs (C_j). The potential migrant must consider the following discounted stream of earnings:

$$V_j(o) = \int_{t=0}^n P_j(t) Y_j(t) e^{-rt} dt - C_j(o)$$

If the individual chooses not to emigrate, his expected income in his home base is the following discounted stream of earnings:

$$V_i(o) = \int_{t=0}^n Y_i(t) e^{-rt} dt$$

It is assumed that potential emigrants are already selected for foreign jobs before leaving their current employment. Thus, the probability of having a foreign job is equal to unity for all $t=0 \dots n$. In the original model (Harris and Todaro, 1971; Todaro, 1978), P_j is the ratio of job openings relative to the number of unemployed in the destination area. In the present formulation, with $P_j = 1$, the emigration decision is just equal to the discounted stream of real income differentials net of mobility costs.

The statistical implementation of the model yields the following cross-sectional log-linear emigration function:

$$\ln(ER_{ij}) = f[\ln(YD_{ji}), \sum \ln(TC_{ij}), \sum \ln(OE_{ij}), \sum \ln(IC_{ij}), e]$$

where ER_{ij} is the rate of emigration, YD_{ji} is the income differential between destination area j and origin area i ; TC_{ij} is a set of moving costs between source and receiving areas; OE_{ij} represents a set of economic variables influencing the flow of international migrants, IC_{ij} represents a set of variables on individual characteristics affecting the earnings of emigrants, and e is the error term which captures unspecified explanatory variables. The equation is assumed to have constant elasticity. Ordinary least

INCOME DIFFERENTIALS AND MIGRATORY FLOWS

squares is used in the estimation. Davidson Mackinnon linearity tests¹ confirm it was appropriate to run a log-linear regression.

The emigration rate is easily conceived as a migration probability. The number of emigrants is normalized by the size of the population at risk to avoid possible bias arising from the proportionality of the error term with the population size. The income differential is undiscounted, since data are not available on discount rates over an extended time horizon. In any case, discount rates are not likely to change in a one-period time horizon (which is analytically assumed for convenience).

Data Definition and Measurement

The 1988 Philippine National Demographic Survey provided the basic data base. It is a large stratified sample of 19,897 households distributed in 13 administrative regions in the

¹The log-linear form was adopted after passing a linearity test presented by Davidson and Mackinnon (1981). The following hypotheses were tested:

$$H_0: y = \beta'x + \varepsilon_0$$

$$H_1: \ln y = \sum \beta_k \ln x_k + \varepsilon_1$$

where y is the emigration rate and x is the set of emigration determinants included in the international migration model. Each regression was estimated, including as an additional variable the difference between predicted values from the two models, in the following manner:

$$y \text{ on } x \text{ and } lz = (\ln bx - \ln(bx))$$

$$\ln y \text{ on } \ln x \text{ and } z = (bx \cdot \exp(\ln bx)),$$

where bx are the predicted values from the first model and $\ln bx$ are the predicted values from the alternative model.

Using a conventional t-test on the additional variables, the coefficient on z was found to be highly statistically significant, relative to the coefficient on lz . This suggests that the log-linear model adds significant fit to the linear model, rather than the reverse, thus supporting H_1 .

Philippines. Each respondent household was asked whether it had emigrant members within the last five years. That resulted in an "international migration" subsample of 1761 individual returns (migrant members were not necessarily present at the time of the survey). Of these, 1289 were short-term to medium-term overseas contract workers or OCWs, in foreign countries and 186 were professionals with immigrant status.² It is assumed that these professionals (mostly doctors, nurses, scientists, engineers and artists) followed an immigration pattern of initially being hired by privated industries in the United States and other foreign destinations on a temporary basis but eventually securing a more permanent immigrant status. A study by the National Science Foundation (1986) suggests that foreign-origin professionals enter the US with "temporary" work visas but obtain adjustments as permanent immigrants after a few years.

Students studying abroad and tourists were excluded from the study, as were OCWs and immigrants who did not report their destinations or for whom destination country incomes were missing (that is, there were no corresponding World Bank country figures on GDP or GNP per capita). If the missing or excluded data are correlated with migration rates (say, the students remained abroad to work and fill the demand of the foreign labor market), there would be bias in the estimates, although this is assumed to be negligible.

Individual movements were aggregated into migrant flows from each of the 13 regions in the Philippines to each of the destination countries. The survey results show that the key destinations for Filipino migrant labor are Saudi Arabia, the United States, Australia, Japan, Hongkong, Taiwan and the Southeast Asian countries. The Gulf Region

² OCWs who have left and returned a number of times were included in the survey. The NDS, however, listed only one destination per OCW, suggesting that at least among those surveyed, no OCW had multiple destinations.

INCOME DIFFERENTIALS AND MIGRATORY FLOWS

as a whole continues to hold a central position in contract migration flows while the US is still the prime receiver of Filipino immigrants (Carino, 1992).

The definition of variables included in the model and their descriptive statistics are summarized in the table below.

The migrant flow from each region normalized by that region's labor force (that part of the population 15 years and over) defines the emigration rate for the region. In the 1988 NDS survey, the migrant flow is the number of emigrants from region i to country of destination j ; the labor force is represented by the number of individual

Table 1 - Descriptive Statistics

Variable	Definition	Mean	Std. Dev.
Emigration Rate	Emigration rate from Philippine region i to country of destination j	0.0016	0.0032
Income Differential	GDP/capita of country of destination j less the GDRP/capita of region i (at current dollar values)	10801.00	7297.60
Transport Costs	International air fare, in dollars, from Manila to country of destination j	872.56	443.12
Job Intermediation Costs	Proxied by CPI for services, in region i	409.02	28.49
Income Inequality	Number of families below poverty of threshold in region i	48.63	9.87
English Proficiency	Proxied by proportion of working population in region i which are at least high school graduates	0.2971	0.0982

respondents 15 years and over for that region. The per capita nature of this emigration measure preserves the geographic variation of the international mobility of Filipino labor. A total of 176 observations were aggregated from the individual returns. On average, there were 13.6 destinations per source region, and correspondingly, 13.6 emigration rates per region. In particular, OCWs and permanent immigrants from Metro Manila and the adjoining regions of Southern Tagalog and Central Luzon went to a disproportionately larger number of destinations.

The income differential variable makes use of per capita income measures. For the various destination countries, 1988 GDP per capita statistics were obtained from the 1990 *World Development Report*. Following the World Bank definition, GDP per capita is a summary measure, divided by population, of the total for final use of output of goods and services produced by an economy, by residents and nonresidents alike, regardless of the allocation to domestic and foreign claims. The figures for GDP/capita are US dollar values using single-year country exchange rates. For the sake of consistency, 1988 GDRP per capita figures were used for the Philippine source regions, although values of average household incomes at the regional (subnational) level were available. GDRP/capita figures were lifted from the 1991 *Philippine Statistical Yearbook* and converted to dollar values. The minimum income differential value was -US\$1,385; the maximum was US\$22,900. Because these summary income measures reflect national or regional labor market conditions in general, conditions specific to immigrant labor are not captured. The *a priori* assumption is that the greater the income differential, the greater the propensity to emigrate.

In the absence of actual data on transaction costs associated with emigration, the 1988 consumer price index for services in each of the source regions is the closest substitute that could be used. Unfortunately, data on official (and "unofficial") recruitment fees *at the regional level* are non-existent. The regional CPI for services is intended to measure price changes in services at the regional level

INCOME DIFFERENTIALS AND MIGRATORY FLOWS

purchased by an average household. While anecdotal evidence suggests that job placement costs are high, it is safe to assume that intermediaries have no long-term incentive to raise transaction costs to a point where potential migration gains are outweighed by such costs (Abrera-Mangahas, 1988). The CPI for services possibly captures only the overhead costs of intermediation (which is assumed to vary with regional prices), but not the rent exacted by recruiters for overseas job information and placement rights. As a result, the CPI for services does not reflect the true costs of intermediation, but the underestimation is probably common in all regions and hence, relatively speaking, not serious enough to affect the outcome of the regression. In general, the higher the intermediation costs, the lower the propensity to emigrate.

Transport costs are represented by international airfares, in dollars, circa 1987-89, from Manila to various points of destination. The information was obtained from the Philippine Airlines. The costs do not include domestic travel costs from various points of origin to Manila, and hence are underestimated. On the other hand, for OCWs who have travelled in the years 1983-86, the airfares would be overestimated on account of inflation. The cost deviations would probably not seriously affect the regression results, however. Transport costs are postulated to be inversely related with the emigration rate.

The region-specific vector also includes the proportion of families below the poverty threshold. This measure, also taken from the *1991 Statistical Yearbook*, is descriptive of the extent of income inequality at the regional level. Presumably, the more unequal the income distribution is, the greater the pressure to emigrate. Finally, the regression also includes a variable on the characteristics of the population at risk. English proficiency, proxied by the fraction of all the sampled respondents in the NDS who are at least high school graduates, is an index of human capital investment and is expected to affect emigration positively.

EDUARDO T. GONZALEZ

The use of cumulative migration flows (the years covered are from 1983 to 1988) in conjunction with regressors measured for only a year, produces a simultaneous equations bias, especially if previous migration flows have an impact on wage levels and income patterns. The bias is probably not excessive, however.

Results

The results are reported in the table below.

The regression outcome tends to support the income differential model. All coefficients have the expected signs, although only three, those of income differential, intermediation costs, and transport costs, are highly significant, at least at the 90 percent confidence level.

Table 2 - Estimates of the Emigration Function, 1988

Independent variables	Coefficient	t-ratio
Constant	-23.08	-1.99
ln (income differential)	0.1143	2.78 *
ln (transport costs)	-0.2625	-1.96 **
ln (job intermediation costs)	-2.257	-1.42 ***
ln (income inequality)	0.8801	0.87
ln (English proficiency)	0.3384	0.49

* Significant at the .01 level.

** Significant at the .025 level.

*** Significant at the .10 level.

INCOME DIFFERENTIALS AND MIGRATORY FLOWS

The income differential variable is highly significant, suggesting that destination incomes remain relatively high, despite new findings (see, for example, Borjas, 1991) that recent immigrant waves in receiving countries have lower earning capacities than earlier waves. Poor immigrant performance in the labor market of the host country, in turn, is attributed to the fewer skills which Asian and non-European immigrants bring with them, although recent evidence suggests that the immigrants' long-run earning potential will be much more like those of the nonimmigrants (LaLonde and Topel, 1991).

Transport costs are negatively associated with migration rates, as expected. International airfares with Manila as point of origin seem to serve as an acceptable proxy for physical mobility costs. CPI for services is significant at the .10 level and has the correct sign. Thus, it confirms the negative relationship between migration propensity and transaction costs. Generally speaking, the larger the combined costs of intermediation and travel, the less the tendency to emigrate.

The income inequality variable has the expected sign but is not quite significant. It weakly supplies proof that emigration occurs where income is mostly unequally distributed. The English proficiency proxy is likewise insignificant. Again, this supports feebly the argument that mastery of English is necessary for successful emigration. The lack of significance of this variable, however, probably reflects the fact that many receiving countries today are culturally diverse, and, in the case of the Middle East and Asian countries, require only a minimum knowledge of English in making transactions. The nature of overseas jobs — construction, engineering, etc.—also does not require frequent communication with native-born supervisors, and migrant workers can easily “get away” with English language deficiencies.

Policy Implications

As seen in the regression results, income differentials are an important policy device in regulating the supply of labor to the foreign sector. Lowering the income differentials between home and foreign countries, say, by raising domestic wages, would also lower the level of emigration. The question is, is it desirable, from the viewpoint of economic policy, to lessen the flow of Filipino migrant workers? That would initially depend on whether emigration benefits outweigh costs.

Rough orders of magnitude suggest that benefits from the export of migrant workers are considerably high. Remittances through financial institutions, estimated at \$1,181 million in 1990, have offset the country's oil bill and reduced the balance of payments deficit (Vazquez, 1992). In terms of job creation, some 15 percent of the annual growth in employment for the country as a whole is directly attributable to Filipino overseas labor (Abella, 1992). Using the 1988 national survey of household incomes and expenditures, Tan (1991) finds that families receiving remittances—about 15.5 percent of the total number of households in the country—had relatively lower income elasticities of consumption than families without income from abroad, suggesting that remittance incomes have a considerable impact on the savings rate.

On the other hand, the costs of emigration are perceived to be low. Contract migration has not led to skill shortages, even in the case of the construction workers, the demand for which was highest among skilled manpower. Periodic job training quickly replenishes the stock of skills depleted through emigration, indicating that the supply of skilled labor adjusts well to market changes (Abella, 1992). Perhaps the only exception is the medical workers, which are in excess demand locally. In the case of teachers, although no supply shortages are expected, the widely-held view is that emigration is selective of the more skilled teachers (who end up nevertheless as domestic helpers in various receiving countries), leaving the education sector skill-deficient. A possibly more

INCOME DIFFERENTIALS AND MIGRATORY FLOWS

serious cost of international migration is an increase in urban unemployment. Todaro (1986) argues that the availability of foreign jobs raises the equilibrium rate of urban unemployment, which is already high without emigration. Rural-urban migration flows increase as foreign jobs (as well as urban jobs left by successful urban emigrants) become available to rural migrants, and as expected income differentials (adjusted for the probability of getting the job) likewise increase or remain high. Whether emigration does exacerbate urban unemployment has not been empirically verified, and Abella (1992) maintains that the domestic labor supply has remained elastic because the sourcing of overseas workers has been broadly-based geographically.

Given that the available evidence indicates that emigration has generally been economically beneficial, the scope for making policy choices out of income or wage initiatives in source and receiving countries is rather limited. Practically nothing can be done on the demand side, because decisions on the extent and level of immigration are exogenously determined. Supply-side considerations are restricted to *preventing* skills shortages, especially skills not likely to be replenished by short-term or on-the-job training. Examples of these skills are those found in the fields of engineering, computer sciences, physical sciences, medicine and education. The transfer to the foreign sector of the country's capital investment in valuable human stock, especially in the professional and technical fields, has significant social and private costs. If critical shortages do happen, it may be necessary to close the foreign-domestic wage gap in order to slow down the flow of professional and technical workers and avoid critical shortages in the supply of services in these areas. That might mean adopting a policy of raising minimum wages in selected sectors, and simultaneously, providing wage subsidies to employers in these sectors in order to "correct" prices arising from factor-price distortions. In the public sector, because technical workers are directly hired by the government, elimination of wage distortions through price adjustments could be implemented with less difficulty.

Even this limited policy option would be generally considered unappealing because it rekindles doubts on the propriety of "institutional interventions" in the labor market, such as trade union pressures and standardized salary scales. Such state policies have come to be regarded as causing economic growth bottlenecks, instead of as simple redistributions with costs (Freeman, 1993). The standard position is to argue that freely-determined market wages will reap positive externalities for the economy, for example by attracting foreign capital. Yet a low-wage advantage, apart from the fact that it does not easily translate into a cost advantage at market-brokered prices, nor necessarily substitute for a high-productivity advantage, also widens the income gap between source and receiving areas, thus further fueling emigration. That brings back the problem to square one.

To break the vicious circle, it may be imperative to shift the locus of the debate from "getting the prices right" to "getting the prices wrong" (Amsden, 1991). Instead of piecemeal price adjusting measures such as wage subsidies, an altogether different subsidy allocation rule may be adopted. According to Amsden, slow-growing economies struggling to industrialize cannot compete on the basis of low wages alone in a "critical mass" of industries, in the face of lower-cost, higher productivity institutional settings in newly industrializing economies. Hence, subsidy-financed incentives must be allocated on the basis of a reciprocity rule: subsidies are traded for concrete performance standards with respect to output, exports and research and development. In other words, subsidies are given contingent on discipline and performance.

After the subsidy allocation process at the macroeconomic level is taken care of, the next policy dilemma, according to Amsden, is how to guarantee that after an industry is made the focus of state intervention, firm-level incentives are managed well to secure world-class levels of quality and productivity. Here, the role of wages and fringe incentives becomes crucial. NICs are dependent on "learning" (borrowed

INCOME DIFFERENTIALS AND MIGRATORY FLOWS

technology); they do not possess the competitive asset of pioneering products and processes of the early industrializers. As a result, low wages even in labor intensive sectors—where the comparative advantage of developing countries supposedly lies—cannot provide the competitive edge in the face of the higher productivity performance by developed economies. In this case, “best practice” management methods would require “keying” wages and bonuses to performance standards. In the NICs, such “conditional” material benefits have been liberally spread across industries and have not gone simply to big producers (Westphal, 1990). Indeed, the evidence suggests that growth in industrializing countries is accompanied by trend increases in real wages and falling inequality (Freeman, 1993). That also often narrows the income differential, making it less attractive for workers to emigrate. Or at least, it redirects the migration flow toward higher-quality, higher-paying international labor market segments. That is what seems to have happened to South Korea when it came to grips with efficiency issues in managing its overseas employment program. The Korean government effectively targeted its supply of skilled labor to lucrative contracts for overseas construction and engineering projects. At the same time, international migration was made a component of the nation’s industrialization program: it was “disciplined” by making it contingent on allowing the government to manage remittance incomes for use in the country’s industrial buildup (e.g., bankrolling the importation of capital goods) (Vasquez, 1992). As South Korea industrialized, the emigration flow ebbed, since wages have risen to levels found in moderately high-income countries. That would be an important lesson to learn for the Philippines.

“Deepening” the economic base through the interaction of state intervention (subsidy allocation linked to performance standards) and market forces appears to be the viable long-run answer to the problem of minimizing any serious imbalances in economic opportunities between home and host countries for migrant workers.

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INCOME DIFFERENTIALS AND MIGRATORY FLOWS

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